

741-900



Note (Jan 22 1900)  
Mr. Krügel suggests the Nassau  
angelopsen may be Cissius  
acida L.

(summitae)  
Code for plant that Mr. Krügel  
could not name from Miami  
is Hypelate trifoliata P. Brown  
also a coccin. on Myrica cerifera  
paniculata Don



(773 cont.)  
 11-13 ~~slipping down~~ ~~at other months~~  
 contracted. Horns short sessile, all  
 moderate and well defined except sd  
 6-10 which are absent or rep. by a few  
 short spine. Hd well retracted. Horn  
 2. Leaf green, dorsum 3-5 streaked with  
 purple, horns whitish green, the large one 1  
 sd distinct blue. The light yellow-green  
 dorsal patch partly encircle horns ① & 5  
 & reaches lat. to ② & 3 and covers all  
 of d. lat. spaces from 5 to 13 excluding  
 horn 11 and forming a notch at ①2.  
 It has a thin yellow edge & without a  
 blackish green narrow m. ringed also  
 about horn 11. Dorsal spaces indicated  
 by dark dots (1) 4, 5, (6), (2) (3) minute, (5)  
 not seen. A white line along sd edge  
 with 2 setae on each seg. Spinules now  
 reddish, 5 in places lat horn. Horn pur-  
 plish about the edge, each Δ black on  
 sides, whitish centrally. Callosities pale  
 on ② 4, 6-12 & ①3 large part, dist spine  
 in elongate line above ①3 & ①2. Skin  
 very densely spinulose, with spines enlarged  
 at base, colored black only in deep space  
 now dark bordering line to d. green; be-  
 coming granular s-v. Apices of the sd  
 horns bare or with a few large callosities.  
 Purple dorsum of 3-5. All horns distinctly  
 shorter than before.

Expenses (708) New York 1890-91  
 Got a live larva Jan 29 in Beach hamock  
 Eating at the upper epidermis of yellow and  
 Oct. making it thin and black Jan 2-3  
 and strongly flattened moderate spinulose  
 whitish without mouth. Hd retracted  
 mouth dark. Two feet rather large and  
 prominent (described through epidermis)  
 all feet ~~blackish~~ ~~and feet~~ yellow  
 and shiny. Hd flat chaperon angular  
 reaching vertex. Antennae minute brown  
 bases obsolete except lat. 10 Jan 9 99  
 2 feet above transparent. Can up  
 move up and down. Spine 266 62  
 and Feb 17 1900 cut no 15643  
 Apr. " " " 792 84  
 May (780) 422 55  
 The tiny leaf miner grew up into  
 January white worms with or without  
 January without brown reticulation  
 and the ends. Hds 1.5 with sd pale  
 August faint brown reticulate spots 40  
 Body transparent, just greenish but all  
 Feb. from fat in the annule 94 53, 92 ad  
 Oct. dark lanced, shaggy. Relys dist 93  
 Nov. and flat greenish, feet white fat  
 Nov. white is not uniform. Body 93 25  
 Dark green.  
 Dec. 780 A White, opaque, tubercle brown dist. with  
 ret. in hds. These at irregular  
 in form - abnormal and black 3 16 9  
 780 B Transparent green, hd yellowish but  
 a black dot on 3. Another all green  
 white. Another a little white with  
 faint brown a head.



Recd 741d

Notodontian egg in chinkapin chestnut, Cedar  
 Island ~~Crash~~ 1899. Hemispherical ~~1/5~~ <sup>8</sup> ~~10~~ <sup>10</sup>  
 or, dull ~~blackish~~ <sup>blackish</sup> ~~black~~. Very ~~flat~~ <sup>flat</sup> ~~00~~  
 Frequent granulation all over nearly obscuring  
 the small hexagonal reticulations. Incisive  
 a minute circle surrounded by a slight raised  
 ridge. D 1.2, height .6 mm.  
 Hatched May 19. Larva at first resembles Nadata  
 all pale greenish yellow. Hd round, scarcely  
 lobed, shining. w 6 mm. Body rather slender,  
 anal feet perceptibly jointed. Approximate. Body  
 slightly shining yellow, setae large, distinct, pale  
 brownish, slightly smaller at tip. Tubercle  
 annular, obscure but more prominent i-v, ii-ii  
 nearly in line, iv behind spiracle. Legs minute  
 with 2 annulate. Later got a broad  
 yellow sd stripe. End of it is  
 Nadata gibbosa. (Put it out)

413.00

2244

392.50

Par (800)

1590 min up along midrib from  
 base and ~~thick~~ <sup>thin</sup> ~~base~~  
 Oct 1 Peaches <sup>.30</sup> ~~bread~~ <sup>1.00</sup> ~~springing~~ <sup>1.00</sup> ~~up~~ <sup>1.00</sup> ~~drying~~  
 " " Chop <sup>.35</sup> ~~Proc~~ <sup>1.26</sup> ~~Peaches~~ <sup>1.00</sup> ~~Bake~~ <sup>1.00</sup> ~~ye~~ <sup>1.00</sup> ~~38~~ <sup>2.00</sup> ~~8~~  
 " 2 Syrup <sup>.25</sup> ~~milk~~ <sup>.04</sup> ~~pie~~ <sup>.10</sup> ~~meat~~ <sup>1.23</sup> ~~Peaches~~ <sup>.30</sup> ~~Bread~~ <sup>.06</sup> ~~1.00 <sup>1.00</sup> ~~1.00~~  
 " 3 Butter <sup>.30</sup> ~~chops~~ <sup>.28</sup> ~~meat~~ <sup>1.00</sup> ~~flour~~ <sup>1.00</sup> ~~1.00 <sup>1.00</sup> ~~1.00~~  
 " Bake <sup>.10</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 " 4 Paper chocolate stockings <sup>.03</sup> <sup>.05</sup> <sup>.29</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 Bananas <sup>.10</sup> ~~Writing paper~~ <sup>.14</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 Bread <sup>.04</sup> ~~me~~ <sup>.10</sup> ~~Book~~ <sup>.3.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 Paper <sup>.20</sup> ~~Laundry~~ <sup>.86</sup> ~~carfare~~ <sup>.10</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 Peaches <sup>.50</sup> ~~meat~~ <sup>.1.28</sup> ~~1.00 ~~Bake~~ <sup>1.00</sup> ~~ye~~ <sup>1.00</sup> ~~38~~ <sup>2.00</sup> ~~8~~  
 " 5 Harry <sup>.04</sup> ~~toaster~~ <sup>.10</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 " 6 Bellows <sup>.10</sup> ~~from~~ ~~1.00~~ <sup>1.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 " 6 Chuck to Albert <sup>5.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 " Chocolate <sup>.02</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 " 7 Fish <sup>.39</sup> ~~Tomatoes~~ <sup>.12</sup> ~~bake~~ <sup>.09</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 " 8 Pie <sup>.11</sup> ~~carfare~~ <sup>.20</sup> ~~Dishes~~ <sup>.1.48</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 Bistons <sup>.30</sup> ~~Meat~~ <sup>.25</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~  
 Paper <sup>.03</sup> ~~carfare~~ <sup>.10</sup> ~~1.00~~ <sup>1.00</sup> ~~1.00~~~~~~~~

22444



$$\begin{array}{r} 39256 \\ 4168 \\ \hline 35091 \end{array}$$
[illegible]



Received 743

Fat green noctuid on white oak, Belfast  
N. D. June 9 1899. Hd 4 shiny lobes, green,  
shagreened. Body robust, 13 small, feet equal  
whitish green, clear, not mottled, a straight  
pale yellow d. line, a light crinkly edged.  
iii pale yellow - a narrow, slightly wavy, 3  
times nearly broken sd line - a similar series  
of oblique line in lat space from ant. before  
iii upward blackened over iii to post edge of  
seg. below sd line - a similar subdy line,  
equally narrow and broken in the slight  
annulet incisure (3 i.e. segs forming 4 annulets)  
but on 12-13 becoming broad and straight and  
running to anal plate which it borders  
narrowly, just below spiracle, considerably  
below 12. 14 at middle or a little, on 11  $\frac{1}{2}$  to v  
Hd. lower than 2 but not retracted. ~~48 total~~  
obsolete. Shaggyish larva. dead 30669

9 (811)

no this feet  
shod strongly and  
on 7-10 winter  
horses

along side. Flattened base with strong  
anterior process. Head round, feet about  
half as wide as h. 5.5. Dorsal ventrals 11-13, 11-13  
projecting at the sides. 3 or 4 small, 5-10  
large. 11-13 lateral, 11-13 dorsal, 11-13  
small. 11-13 ventral. On 2 a quadrate shield  
exposed at side, the first angles produced  
laterally like curved horns. A dorsal and  
ventral greenish black patch 3-13, those of  
3 or 4 small, the rest corresponding with the  
size of the segments. Can't tell about feet, weight  
taken from mine. N. 27. Head black.

from mine mine Jan 27. (Heard Rooster)  
" Bananas, Bread 2 3  
Seta, black dish. i don't b ii

Press goods pattern; pattern requires 800  
an hour part of up; vi distance

*Linniger* sv. vii a leg. all union

2. *Bayani* dark, shiny except a large white spot on iii; the spot

3.3 *Leas* *shrimp* *compositum* *nits* *1* *head*  
by a *head* *does* *is* *distinct*  
*back* *in* *the* *mouth* *of* *the* *head* *1* *2*

3 Bayard's Quail. Hd brown, slaty black  
Neat + rather like a quail

C. ch. suff. white, head white spot  
on 3-4. Contour flat. i-v-r with illa with

are approximately 1.25 feet on 7-10, 13 feet

part 4. 8. 4. 3 Harry's hat 4.00  
the crown on a hat 7.00 5.00

Harry's pants	8.00	12.00
Child's black dress	5.00	5.00

Old Blast flour 103.00 241 50  
\$442.25

TT 22



744

Phalaris 15218 Phalaris viridis

as light. eggs June 9 1899 flattened ~~as they~~  
smooth, very <sup>finely</sup> reticulate  
hemispherical, ~~the apex a little pointed, smooth~~  
with only faint traces of vertical ribs seen  
around the margin in certain lights. Pale  
yellow, somewhat translucent D.S height .3  
(Eggs infertile)

802

It has a point  
No cells.

Lana Head rounded, prominent, the labrum a broad  
overhang to base with small spines and palpi at  
tip. Labrum moderate, a broad band extending to vertex and  
not narrowing. Lobe full; no large coluber ocellus. A  
few rudimentary setae; translucent yellowish w. 3 ±  
as piece (para-dorsal?) each side base of Δ above labrum.  
Body flattened moderately, round, tapering much  
behind, not before; segs. pyriform. 2 wide than  
hd. with rudimentary setae withing ~~2~~ 1 2 3 4  
3 still wider (ia side faint distinct on 3 & 4) - 4-10 about  
equal, 11 smaller, 12 still smaller, 13 very slender  
divided by a strong suture. No plate ~~2~~ 2 5 9 7 6  
setae on abdomen. Skin finely granular, not  
annulations creased. Tho. feet absent, represented  
by 3 pairs of circular smooth plates. Abd feet  
rep. by narrow concave ellipses ~~2~~ 2 3 4 5 6 7  
apiculus on joints 6-10 and a terminal median  
patch on 13 post. with a seta on either side.  
Skin as above. Color translucent whitish with a  
yellow tint. No setae except on thorax and  
14.

(745 VI) *Heur. Rapid*. rounded, slightly  
narrowed above. 12. *Darkly shaded*. *light*  
*equal in thickness above below*. *Chryse*  
light the *General*. *Candy* *café* *49*  
vertical *patch*. *width* *20* *mm* *core* *pole*  
*was* *thin*. *face* *shiny*. *material* *with*  
*dark* *from* *above* *the* *ridge*. *Chryse* *and* *on*  
*one* *or* *either* *side* *pole*. *Side* *faintly*  
*marbled* *with* *pole* *from* *light* *distinct* *up* *rate*  
*Body* *cylindrical*. *rather* *short*. *neck* *slightly*  
*narrowed*. *smooth*. *Chryse*. *right* *12* *produced*  
*5-7* *fold* *slight* *convex*. *areal* *shield*  
*long*. *width*. *Throat* *fair* *rather* *small*  
*equal*. *Wheat* *and* *far* *in* *dark*. *growing*  
*prominent* *black* *dashed* *line* *slight*  
*bordering* *into* *shade*. *Joint* *12* *U*. *Right*  
*venter* *slight*. *Right* *to* *dark* *faint*  
*tubercles*. *Carfax* *or* *olives*. *Carfax* *right*  
*black*. *slight* *black*. *70* *slight* *marked*  
*with* *red*. *Yellow*. *Silk* *yellow* *2* *1*  
*at* *base* *Wheat* *the* *predominant* *line* *is* *valley*  
*but* *of* *my* *angle* *a* *coarse* *net* *between*  
*leaves*. *Wheat* *Parma* *shade* *1* *0* *5*  
*and* *reddish*. *There* *is* *a* *hard* *double*. *diffuse*  
*shaded* *dark* *reddish* *first* *stage* *and* *2*  
*The* *lateral* *part* *may* *be* *fair* *1* *0* *0* *distinct*  
*rare* *convex* *into* *a* *hard* *shade* *3* *0*  
*indian* *above* *1* *2* *times* *set* *line* *2* *0* *0* *receding*  
*over* *but* *right* *in* *dark* *5* *fold*. *The* *lateral*  
*form* *is* *valley* *and* *with* *single* *spiral* *and* *paid*  
*5* *black* *lines*. *Tubercles* *if* *produced* *come*.  
*and* *left* *areal* *squamous* *fold* *3* *0* *0*

11 11 Check to Steffens

$$\begin{array}{r} 1659 \\ \times 4693 \\ \hline 6352 \end{array}$$



*Gonodictis hypochuaria* HS  
(Described Ent. news. I, 61)

Received 195

AS  
Persimmon  
Taffie V  
(Aug 12 '99

Egg by W. P. 15221 June 10, 1899. Stage 17  
greenish white, opaque. Regular elliptical from  
upper aspect, one end depressed, wedge shaped  
from side aspect. The other end obscurely truncate.  
The truncation not sharply marked and  
consists only of a slight flattening. Surface nearly  
hexagonally reticulate, the reticulation distinct  
and raised very narrow but with rounded tubercles  
at the angles as large as  $\frac{1}{2}$  the diameter of the cell  
areas. In the shiny side the tubercles are dark, pale  
on the dented side and on the edge. A plain protruding  
makes a handsome egg. All round, no angles.  $.8 \times .6 \times .5$  mm.  
Laid on bottom of tumbler. June 15 turned opaque pink.

June 21 turned gray-black.  
 Hatched June 21. Banded tail birds. Hd large round, dark  
 brown on vertex, face strongly mottled with white. 2  
 segs 5-9 enlarged a little centrally by small blunt sd  
 processes, <sup>because of</sup> all of dorsal, 10-12 dorsally and large  $\square$  d.  
 patch 5-9 dark with brown border by a narrow d.  
 line and on 7-9 by a finer sd line also. Feet dark.  
 Genita with large spots connected like the dorsal  
 ones and joining those somewhat narrowly on the side  
 setae small stiff dark. tubercles obsolete. Ground  
 color white. Setae not perceptibly glandular  
 Loop rather slowly and shagreened. Later the pale  
 spaces are cut by several dark lines, very resolved  
 on to a number of white dots. a dorsal ~~band~~ <sup>3</sup> ~~on~~  
 and edge of the seg. are a little elevated, while the  
 horn elevations are less conspicuous. anal ~~ft.~~ <sup>8</sup> ~~folded~~  
 raised and thick scale. ate perissommon. bit like shell.

moles not touch oak. ate persimmon.  
Shed July 27. Hd. 5" wide, thin, flat before, disk like, shallowly  
relobed, red brown spotted with white. 4 spots on front  
covering most of surface, 2 spots on the narrow sides.  
Body essentially as before. 2d. brown blunt processes on  
5-9 the segs banded irregularly centrally with red brown  
connected by a minute, indistinct brown line; inter-  
space broadly luteous, spotted with many small  
bright white spots. 8-13 the d. brown bands predominate  
and the seg. bands are fainter, being absent 10-15. Thorax  
as dark above, just pale abd. feet dark. Brown ventral  
white rather distinct. Later the brown color fades

and only the low processes (which are nearly lost sty) remain dark.

[illegible]

8. *W. 1.6* flat before sides and venter concave and  
 of even width a slight notch (stallion). Back with an  
 irregular pale mark composed of a whitish  $\Delta$  with which  
 4 dots are connected, the 1st dot all along with a dark  
 brown band dotted with white; sides & venter white, marked  
 with brown esp. in center of side. Just anal. in vertical notch.  
 anal. plate large & 7th seg. 30 in a slight elevated  
 black spot. Color higher. *W. 1.6* 30 in a slight elevated  
 white and interrupted with a few black dots. On obscure  
 dorsal black d. line from mid thorax to 6) 28 and 7) 28  
 dots, the anterior one larger & d. line. Thorax s-v and a  
 dot before spiracle. *W. 1.6* 30 in a slight elevated  
 and 11-13 s-v & rather obscure marked from back like.  
 During the stage the color pale to an almost white grayish  
 the white being obscure and the black dots prominent.  
 Stage 16 1st 2. *W. 1.6* 30 in a slight elevated  
 with pale markings. *W. 1.6* 30 in a slight elevated  
 and 12 1st 2. *W. 1.6* 30 in a slight elevated  
 by shield large pale and brown speckled with black, the  
 tubercles *W. 1.6* 30 in a slight elevated  
 prominent & formula in a circle; a similar brown ventral  
 line. Feet pale. a dark s-v shade a thorax. Setae obscure.  
 dorsal tubercles a little prominent.  
 1st 2. *W. 1.6* 30 in a slight elevated



80/125-1899

Received 7462718

Cardinal Junco  
Habitat. June 22 White, tawny and 10-13 dunnish  
central wing bands 4-9 dark red brown. Red legs  
and dark brown. nuchal region a little paler than  
sides. Short, stiff tail, from minute dark tubercles  
Body smooth, no projections. The horn on throat  
is a slight shading, as 10-13 in d. and bands.  
Red tail. One longitudinal band on central  
portion. A very faint bluish brown lateral line  
crossing the bands. The scales on throat and 10-13 are  
in the form of faint trans. bands. very gray but finely  
and apparently suited by sitting on the sharp end points of black on

shin and pale.  
(Found) more hds. 6 on black & white oak, Belfast July 15)  
This shell July 15 Hd 1.0 Same Hd white with many brown  
brown black speckles, thicker at sides front and anterior 1/8,  
rounded lobes, higher & wider than 2. Body pale gray, or  
slight greenish tint, obscurely longitudinally lined with  
several whitish lines and sparsely black speckled.  
Tentacles i and ii, small sd shields just on legs. Spin  
acles 5 or broken line and median ventral clashes are  
the position of these speckles. Foot 1.0 and side 2

Aug 18 the subject shed new bed 6.6 mm  
 11 2.6 Canopy over Pear Powder for silver 30  
 Aug 27 Hds 1.05-1.14 .4 (to th). Of the large was one  
 11 2.6 Canopy over Pear Powder for silver 30  
 per state showing white gear. The other 2 pale  
 head all white from black dash 1.0

*Theraps* *atlas* *Shapard* (H. 316) 1  
 " " " *Simpson* family 1 19  
 43 71  
 3 0 1 2



Chelytolita morbidalis Suen

Aug May 19 1900 747 = 664

Egg laid by Scleroid 15220 Chelytolita morbidalis from Bushy woods June 12-13, 1899 (Did not lay first the night) Hemispherical, edges rounded under a little smooth shiny, regularly reticulate, the ret. small and not conspicuous. Translucent, watery, a little yellowish. The yolk granules distinct and giving an opaque look. Diameter .6 mm. Laid on side of glass separate.  
Hatched June 17 PM. Little colorless semilupers. Hd slightly bilobed, colorless, mouth brown, ocelli black. W. 2 mm. Ocelli 6, 4 in a semicircle above 2 below in a pair. Setae colorless, simple. Body whitish colorless, shiny, feet on 7-8 a little smaller than 9-10, the feet large. Setae long, rather coarse, very minutely bulbous topped, normal, subprimaries absent. Tubercles arise somewhat from the body but concolorous & obscure. Part of the hairs curve forward. No shields visible. Ate dead leaves and made a fine web about themselves.  
June 22 Hd almost .9 and did brownish white, not shiny. Ocelli dark setae pale. Body slightly flattened. Tubercles small, brown, normal. Feet on 7-8 small. Shields not conspicuous with body, their tubercles also brown. Setae pale. Setae increase slightly. 14 below spiracle.  
June 29 Hd .6 and, pale yellowish brown, dotted with dark brown. Body dark and dotted yellowish brown giving dotted reticulate with red-brown, giving faintly a dorsal line and leaving spaces around the same blackish tubercles. Shields not conspicuous. Feet equal. Setae pale small.  
July 3 Hd 1. pale brown, smooth, very obscurely shiny. Body like 644 II but rather hairy, shiny, wrinkles obscure. (664 "all leaf brown yellow ground giving reticulate with dark red brown uniform nearly, the only mark a faint brown dorsal line. Tubercles small, black, setae aciculate, VI & VII white, coarser")  
July 9 Hd 1.4 ± Hd pale brown, fine dotted reticulate, a mark above & and vertical mark faintly in distinct lines. Body somewhat flattened by being compressed in spring. Setae slender and compressed marks. Ret on sides indicate a narrow sd line.

.24	.35	.72	1.03	(70)	1.3	1.55	1.8	2.1	(86)
747.2	4	.6	1.0	(1.4 ±)	1.55	(1.8)	2.1		(100)
664	-	-	.8	1.0	1.4	2.1			

Sits on dead leaves, sluggish, covered by soft web. (Hatched June 17, 1899, stage July 30)  
Aug 10 Hd 1.65. Hd small, rounded, pale brown, reticulate giving with dark red brown. Ocelli black; setae short, pale, fine, small. Body whitish, tubercles narrow at 2, otherwise thick & robust, flattened ventrally. Head brownish, 13 small. Pale shiny, marked reticulate with dark red brown, an obscure dorsal line of dark brown, reticulate. Tubercles of spiracles black, 11-12 below spiracle 9-10 of spiracles small. 12 below lower angle spiracle, as a little above. 12 below lower angle spiracle. Shields obscure, the anal pl. more so. Setae both greenish, marked, and more distinct than head but not contrasting. Setae obsolete, except 5-8.  
Sept 15 Hd 1.8 and same. (Hd 1.55).  
Sept 15 Hd 2.1 and, not lobed, pale dull, shiny, reticulate with red-brown, pale a ventral, chylal pattern and ocelli distinct. Body yellowish, opaque, reticulate with red. Hd. red-brown line not crossing the dorsal plate, diffuse. Ant. maxillary and palpal. An irregular dorsal line crossed by the reticulate. Very dorsal brown in an arc of which III is the upper center in each seg. Tubercles distinct. Internals black, setae obsolete except 5-8. Spiracles black. Shields & plate not conspicuous. Like 644 II but not distinctly reticulate, then tubercles, internals brown. Body moderately short, a little flattened ventrally; 7 equal with next spring. Feet equal, short.  
Eating a little Apr 30, 1900 grass as well as dead leaves. Three pupated May 1. Setae 9-18 Spring. Hd from pupa 1.8 mm. Other skin hd 2.1. Pupated in delicate web like larva.



Spätsch  
Kettich

Solitary in back of leaf near edges

Shad VII Hol 2.2 (Skoll. 8) no perceptible any to 2  
clear whitish green, the dorsal vessel dark and  
plainly protruding. Ventrals as before feet about  
equal, all with dorsal claspers, but short.

Shed just 21 Hdl 1.3 i.e. and the sig. folds distinct  
which are other samples as yet.

Egg shell flat like thin hemispherical, domed, silicles  
 and faint, finely ribbed d. 6 mm colorless, each black  
 more Hds. 3 rounded, slightly lobed. Body slender, colorless  
 transparent, feet green; feet on 7-8 rudimentary, not used  
 larva vermiform. shields orange convex, hairy but  
 tubercles distinct. pale dark indist, setae short, stiff,  
 white, 1-1 1/2 in a square. Monitiform, incisures rounded.  
 seg. with very strong 3-annulate. Primary setae  
 just 25 Hd. 6 or 35. about 48 ribs around the margin, with low,  
 distinct, diminishing by confusion in pair toward center, very  
 slightly bowed. dorsal streak faint line crossing the hollow  
 obscurely indicated on the bridges. Microspine somewhat  
 broadly finely rounded reticular, not ridged  
 Stems of corn & web and living stuff on cover

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Quite Volant I in white oak blower  
 Bridge Va. June 25-1899 Hd. not lobed  
 white setae coarse black, primary; a black  
 V at apex of A with a large spot on either side,  
 tubercle in a black spot, 6 colored black marks  
 both side of A ending in a tubercle at left  
 end with a reddish shade round by, jaws brown  
 w. 6 mm body normal, and feet slender with  
 used; tubercle P prominent elevated but concolorous,  
 setae densely black coarse laterally pale  
 whitish green, traces of a white s.d. stripe, a  
 brown s.d. spot on 2, 4, 5, 7, 10, 12 & 15 post; a  
 yellow one a little higher up on 3, 4, 6, 8, 9  
 and faintly on 11 and 13 ant. Feet pale like body  
 Shed June 26 Hd. hypostoma 2, somewhat conical, greyed  
 white; dorsal V-mark apex A, spot each side, spot on  
 vcell i, tubercle i & ii black also the two side tubercles  
 an angular red mark between i and iii; base of pale  
 brown; ocellar large black. Tubercles arise iv faintly  
 the mantle essentially as before. Setae large stiff  
 black and far red (such as *Hypanox aurora* &)  
 Shed 27 Stage 2nd red marks expand forming  
 a d. line, furcate on c-8 & reaching to a transverse  
 patch on 5. Another and patch on 7, 10 and 12 the two  
 latter also joined by a d. line. Anal pl. red, bisected  
 and feet red. (now I doubt it is *Heterocampa* or *Myiodes*)  
 Shed June 30 Hd. higher than 2 conical, not lobed w. 1.6  
 mm white, a vertical red brown band across i-11 &  
 base angular in width, a V mark apex A and spot  
 on ii; vcell and upper part of dorsal Setae all coarse  
 black. Body pale greenish white, dorsal faint  
 marked with yellow & brown as before, the brown  
 faint and less distinct. *Macropis* *Macropis* line 1 2  
 tubercle high, i slightly furcate, s.d. in brown segs.  
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

35 Admission to Art. gel. <sup>100</sup> Cafar 155

4196















38 35 76 1.08 1.44 2.2  
32 6 8 1.0 1.2 1.6 1.8 2.2 *Series X*  
*Received 19??* *Sept 28, 1899*

Larva on *B. maculata* (Gleditsia) June at Raleigh  
 July 15 1899. Prothorax and 1st *Thelina* sp.  
 Eggs. Laid a top of a pine needle in a row 2 dist.  
 station, 3 above. Elliptical, flattens above & below, the  
 ends rounded, a little wedge-shaped from side view.  
 Notched from beneath with which shows a brown  
 well marked. Surface fine reticulate.  $9 \times .6 \times .5$   
 Hd. hd .65 and rounded, brown black, a little mottled  
 with pale. Body pale brown with longitudinal  
 dark brown lines, distinct is a broad lateral band  
 leaving the dorsum broadly pale and the s-v fold  
 distinctly so. Venter indistinctly lined. Tubercles  
 11 sloping brown rounded. Feet all brown  
 a pale sd line edging the brown above. Rather  
 slender, smooth. Eat channels in the needles.  
 Hd. 8 whitish brown, a triple line on face of each  
 side, brown only narrowly in anterior & on July 29. 7. 2. 2.  
 Light rounded green faintly green lines with  
 the sd line most distinct. D. space crossed by 7. 1. 8. 5.  
 add. line, is not contracted. Lateral 1 and 2  
 curving, a shade below sd line, a few  
 dark spinules and a s-v line; venter obscure  
 and with dark median-ventral patches. Feet pale.  
 a heavy dark sd spotting on thorax  
 July 20 Hd 1.0 round lobed whitish dotted thorax  
 with pale brown a ruffa band and a few dark brown  
 dots at apex and apex of s. Body pale brown almost  
 whitish, faintly longitudinal lined. D. space with 3  
 pale line and 9 whitish lines, a sd streaks dark  
 brown line with slight irregular marks below and  
 dark spinules; a narrow s-v line. Venter lined  
 like dorsum pale brown & whitish and a median ventral  
 series of large dark brown spots. Feet pale.  
 July 30 Hd 1.2 Hd rounded lobed pale pale greenish  
 tubercles and sutures marked with brown. Body  
 smooth uniform. Pale green, a little whitish, sd  
 line obscure, whitish, dorsal space with faint  
 pale brown lining. Lateral region obscure  
 more distinct so, appearing darker and

[illegible]



Received

Water of Hd. 5-8

Little Lake Lodge Receipt 20. July 1892 37

Hd. 6 ± round pale brown, body pale brownish, almost  
 white, a very broad dark brown band across of a  
 dorsal line and S-V fold pale; below a similar  
 S-V band below a rather broad median-ventral  
 pale stripe. Feet pale. with faint dark brown streaks.  
Another Hd. 7<sup>or 8</sup> pale brown with black dot on tubercle &  
 in sutures. Body fine ambulate pale ochraceous brownish  
 with brown, the dorsal clear, the lateral one broad  
 streaked with dark brown, nearest above is a nearly  
 continuous sd line. S-V fold pale, a S-V and ventral  
 broken brown line. Spiracles dark, feet pale.

July 3 Ht 1.0 Same dorsal faintly bluish; tubercle black  
Aug 12 Ht 1.0 Same left got 1.0 bl. Looks very like ~~3~~ ~~7~~  
thing Koebele had in Fla. on ~~like oak~~.

Shuttle 21 Hd 1.4 (Thd 1.1) nearly white with 9/4/30  
dotted markings, suture; tubercles usually  
black, yellowish white, dorsum finely lined  
with brown leaving a white sd line, just when  
tubercles black; sides finely lined with brown  
black thin line irregular, patch confluent  
forming a dark shade in general view feet  
darker pale, the latter with central spots

Aug 30 See no difference between this and 746

Shid Sept 22 Hdd 2.1 Lites 746. Hdd round slightly bilobed  
dark green, a high. Whitish, thence brown dotted,  
tubercles as black spots. Body moderate, brownish,  
the hump. Back brown in general view. Head  
greenish white; a sd line of this color splashed  
with orange in incisions and in color on the feet  
and anal plate. Dorsum filled in with narrow  
crossed brown lines, dark edged sd line  
very black. Tubercles; 1st black, 11th largest  
spot. Sides annular of brown, and then from  
shoulder line are narrow black, replaced just  
below the pale sd line, Subventer below feet

more brownish, separated from the broadly pale  
spots by a fine black line. Center faintly  
lined. Feet rather pale, spines dark.  
[within the observed variation limit - the  
description applies exactly to 2746 and 2753.  
They are alike at maturity.] 34

shed Feb 25 - Hd 2.2 (Skad 1.95) Same but dark.  
Hd tubed, narrowed above higher & wider than 2  
claspers 2/3 head. Labial (and) membranous. Whistle  
fetter with brown sheath in lower 1/2, tubercle  
& jaw black. Body moderate, uniform, smooth.  
Bell straight & applied to surface. Ground white  
becomes mottled with irregular black lines and  
long bluish white spots. Ed line distinct filled  
in with dull red as also on Dorsal space rather  
dark, fills into the five irregular lines of the  
various reading and tubercle slightly mottled in  
black. Lat space similar but darker, blackish  
with some reddish. Ventrals slightly darker. Ventrals  
pale, circular mottled, but 5th being a red-  
dish, so that with black wing the 4th and  
a double black ventral line meeting dark grey  
patches. The intermediate black blotches first  
developed. The ventral 4th also darkly mottled.

Sp. " <sup>25</sup> Pork	Bayan	35
" " Meat	Boris	25

Check to Herbert 8 00

40	Fish	50	7.00	
	Dressmaking			7.50

11.00	Rock	10	Trunks	24	35
-------	------	----	--------	----	----

3107



Force .35 .50 .7 1.1 1.6 2.2 2.8 3.9  $\frac{2}{10}$

Cent 15867

(\*) and heavy 12-13  
absent at ends.  
Tubercles high, curves  
gates white stiff  
of fine broken & small  
beams a large brown d. sp.

On Q. coccinea & Q. tinctoria Brookhaven July 16

3 tubercles on each side of the large II, those on

Ad. ♀. Smaller, differentiated & contracted.  
Ad. ♂. Whitish, slightly tinted. Body translucent whitish green from  
 green food. 3 high tubercles on c-sh, i-iii of body also have  
 but not over  $\frac{2}{3} - \frac{1}{2}$  as those of stink. High tubercles yellow.  
 Setae all pale, warts with central & few other spines.  
Ad. ♂. I. Colours whitish, ii iii brownish yellow. Growth  
 on c-sh largest & crown Y, i-iii of body large, base  
 conical, not crowned. Body green from food i-iii yellow  
 i largest, trace of white d. line and broken irregular sd  
 tubercles off dorsal yellow. Setae coarse curved found,  
 the 2<sup>d</sup> & 3<sup>d</sup> small. Base broadly yellow.

The 2<sup>nd</sup> of white small & dense broad yellow.  
 Head yellowish. Hd. 1.6 Ant. 35 bilobed, feet large. 39 55  
 coarse dense black. Body colorless. Hair <sup>obscure white</sup> black. Setae  
 black, not colorless. Tubercles slightly curved all  
 small. Feet normal. II with shorter hair than other.  
Legs Hd 1.6 pale yellowish, slightly bilobed, setae distinct  
 coarse white. Tubercles i ii yellow & a black produced;  
 surface with fine points. Pro. i ii large, more  
 united oblique, dense, with apical hair and  
 few smaller setae; joint of 3 on 6th large, still  
 short crowned. Skin fine, spinose. 6-8th legs 2  
 long detached; of the 4 kept the inner part. 6 not  
 produced. Tricubent greenish from foot; large tubercles  
 yellow; 5th has a series of slightly oblique yellow  
 dashes between tubercles; a faint lat. line. Setae  
 white, stiff, arising from a small perfectly single  
A 2<sup>nd</sup> 19 Hd. 50 colorless, slightly yellowish, 5th short crowned.

0.5 cm. Anthers produced, not crowded, as in  
 above but no anthers. Hairs white. Tubercles several haired  
 2.5 cm. (1.5 cm. head involved), whitish, bearing from roots yellow  
 3.5 cm. Sides large & with tiny crown of short hairs, all else to 1.5 cm.  
 single haired. Translucent, dorsum, head filled in with large and  
 black and small of - sd - lat. Slight lines & tubercles. Sd broad  
 2.5 cm. (1.5 cm.) 0 ring colored. Hairs single (1.5 cm. with small

Calc. .35 .50 .77 1.1 1.56 2.22 3.17 4.53  $\frac{7}{10}$   
Calc. 2.18 2.9 3.9  $\frac{75}{100}$

Colr.

$$\begin{array}{r} 2.18 \quad 2.9 \quad 3.9 \quad \underline{75} \\ 100 \end{array}$$

Page 56

Feb 9 Callas Bunkin 1. July 1899.

2nd birds all large <sup>3.75</sup> <sup>6.75</sup> <sup>3.00</sup> <sup>5.00</sup> <sup>5.00</sup>  
 or also but <sup>2.42</sup> <sup>1.57</sup> <sup>1.10</sup> <sup>3.00</sup> <sup>5.00</sup>  
 1st birds or contrasting. <sup>5.00</sup> <sup>5.00</sup>

2.10.19. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 841. 842. 843. 844. 845. 846. 847. 84

[illegible][illegible]



*Eustigis pupula* Hbn

Received

Dec 2 1899

*Synaldis*

Miner in Kappagran, Neds. Del. post 9.30 July 22

1899. <sup>v</sup> Single ~~as the~~ ~~head~~, covering the head ~~of~~

a large fine web and eating out the insects in

the pods forming two (holes) in each pod.

Slender, green, the eggs faintly banded with

yellow and yellowish sv; a dull crimson

d. a lat patch in the yellow fault as the

ends or ~~are~~ <sup>is</sup> ~~mounted~~ <sup>with</sup> ~~small~~ <sup>small</sup> ~~carriers~~

~~Locally~~ Hd testaceous green 7.0 mm s.b. sp.

Orchi black. IV + V on prominent 5-5-5-5-2  
Hd joint below 2. Setae long slender double 5-5-5-5-2

Q. 8 Do not faint. yellow paint & resins. 30 46  
with red stripes.

not being distinctly Wolfer is in cases 1, 9, 86

hd 4 pale testacous. Body all green

Hd 1.2 Green brown mottled, w. lobes; ocelli black

body green, 5 or 6 fold markings indistinct, dorsal seg

Winds on 2-14; dvel crimson reaching sv fold,

irregularly bodied, propagating a birth before at

Miracle, setae fine, dusky, rather long.  
 Another 6 mm and hair sd: sd pale abundant

(separated by parallel double lines)  
One open L. & H. 10/23

Chas. May Jr 1899 Catonsville

1871

(iii) Lines from numerous crinkles all defunct.  
 Sd (ii) blackish, rather distinct but broad &  
 spaces free of brown crinkles, last again with some  
 rather strong lines and subcracks all fleecy.  
 The hair tend to ~~be~~ ~~be~~ brown & black but are  
 much compressed. Ground a  
 See after 9999

*Shrub. Aug. 24 1899. Laid perfect. 1002*

in numbers. ~~not~~ around like sand! Elliptical & not flattened and less diameter in one direction both

ends provided One even slipped the flatter (unexposed)  
Retracted large, and is the length of the body.

strongly expressed. The head was  
 and arranged in a new shape, the length  
 20 2. The head was not thick.

which are honey bees especially these two cross into each other

that the lake is all the way to the north of the lake  
white quartz in the lake near the lake

Bright bluish green, later dark red

Hyattsville Dec 7. Hd. round. Pale brownish slightly lighter  
mottled with a line above black cells and with

whitish on the face  $10.2 \pm$  mm Body rather short, not  
very slender feet long, 8th and anal ft. large, but

not strongly emphasized. Each week, a new topic  
 and people from scripture, obsolete in col, then day

single dorsally 10-13 and bearing a narrow 1/3 in.  
on anal pl. a broad ventral single colored band  
1/3 in. wide.

lenses. Full pale. Setae short, black, with slender  
anthers. (See also the notes on the first lens in)

sharply tipped. It is gray in the center, the well before a  
blackish line, the rest of the head and thorax is black. The

V below III. VI absent. 2 dots of VII. Voles as far as in a triangle.  
VIII is ventral dark band. On thorax subspiracular absent. 5 to

very long hair, most abundant and white large tubercle  
the white maple in preference to the other and weedy

[illegible]

*H. hirsuta*. Hd. light green. Body light brown. Moderate  
the same as above. Light green on the sides, a

broad purple-blue s.d band, the pair united into a d band  
10-13. a-things obscurely pinnate and distinct. 3 or 4

light red on G-th. a broad ventral stripe of same dark color, covering all G-th feet except on lateral aspect

III Hol. 65 rounded, blunt flat. pale brownish







Out June 2 1900 Car No 15907

[illegible]



Later a heavy black ~~streak~~ <sup>streak</sup> appears just 2/3 of  
 center esp. just reaching side and finally  
~~the dorsal~~ <sup>the dorsal</sup> ~~is~~ <sup>is</sup> ~~not~~ <sup>not</sup> ~~seen~~ <sup>seen</sup> but ~~leaving~~ <sup>leaving</sup> ~~an~~ <sup>an</sup>  
 feet pale outwardly. ~~Stomach~~ <sup>Stomach</sup> uniform brown fine  
 annulated, then ~~the~~ <sup>the</sup> ~~dark~~ <sup>dark</sup> brown dots obscure.  
 Stage 1/14 Hd 9 brown lobes, smooth, ~~chaper~~ <sup>chaper</sup>  
 full central; whitish ~~when~~ <sup>when</sup> a little ~~flashed~~ <sup>flashed</sup>  
 into brown. Body slender long, smooth the segs  
 finely annulated. Pale dark-brown from the ~~sup~~ <sup>sup</sup> ~~er~~ <sup>er</sup> ~~post~~ <sup>post</sup>  
 with small brown sd dashes ~~near~~ <sup>near</sup> ~~incisions~~ <sup>incisions</sup>. Venter  
 heavily shaded with dirty black ~~must~~ <sup>must</sup> ~~so~~ <sup>so</sup> ~~just~~ <sup>just</sup>  
 but leaving the feet outwardly pale. Marks ~~enlarging~~ <sup>enlarging</sup>  
 as at end of last stage. Tubercles small the ventral  
 ones pale. (But not done in tumbler Oct 1) Eating again  
 first in Apr 30 1900 Hd about 7 of the two alive.  
 Stage 9 Hd 1.1 rounded, rather strongly bilobed, ~~as~~ <sup>as</sup> ~~on~~ <sup>on</sup>  
 face, brown fluted, a hind ~~differs~~ <sup>differs</sup> ~~from~~ <sup>from</sup> ~~a~~ <sup>a</sup> ~~cell~~ <sup>cell</sup> ~~2433~~ <sup>2433</sup>  
 on ~~sub~~ <sup>sub</sup> ~~area~~ <sup>area</sup> ~~and~~ <sup>and</sup> ~~longer~~ <sup>longer</sup> ~~one~~ <sup>one</sup> ~~up~~ <sup>up</sup> ~~each~~ <sup>each</sup> ~~lobe~~ <sup>lobe</sup> ~~before~~ <sup>before</sup> ~~each~~ <sup>each</sup>  
 vertex. Body ~~opaque~~ <sup>opaque</sup> brown, black shaded 28  
 ventral 9-13, feet pale outwardly. Segs ± 36 annulated  
 a trace of brown d. s. d. line and ~~black~~ <sup>black</sup> ~~2461~~ <sup>2461</sup>  
 streaks ~~near~~ <sup>near</sup> ~~incisions~~ <sup>incisions</sup>. Last part a seg. ~~black~~ <sup>black</sup>  
 shaded. Spicula black. vi on a low ~~shaded~~ <sup>shaded</sup> ~~hump~~ <sup>hump</sup>  
 more distinct 516. Tubercles minute; setae short black  
 Stage 1/17 Hd 1.6 somewhat square rounded ~~free~~ <sup>free</sup>; white  
 gray from mottles a hind ~~diffuse~~ <sup>diffuse</sup> ~~mouth~~ <sup>mouth</sup> ~~dark~~ <sup>dark</sup> ~~orange~~ <sup>orange</sup>  
 from behind ocelli and a ~~short~~ <sup>short</sup> ~~one~~ <sup>one</sup> ~~each~~ <sup>each</sup> ~~side~~ <sup>side</sup> ~~in~~ <sup>in</sup> ~~center~~ <sup>center</sup>  
 Segs 28 ± annulated cylindrical uniform slender, well  
 drawn out. anal feet projecting out, flat head small  
 at end, shield all ~~concolorous~~ <sup>concolorous</sup>. ~~dark~~ <sup>dark</sup> brown ~~above~~ <sup>above</sup> d. 3-12  
 a diffuse red brown d. line leaving a black white bar  
 on the large annulated 1. Black ~~crisp~~ <sup>crisp</sup> ~~add~~ <sup>add</sup> ~~lateral~~ <sup>lateral</sup> ~~dorsal~~ <sup>dorsal</sup> ~~and~~ <sup>and</sup>  
 a part on each seg; the part a little more lateral & a little  
 oblique, a diffuse, sparse pulverulent black ~~stip~~ <sup>stip</sup>. ~~on~~ <sup>on</sup>  
 shading; ~~heavily~~ <sup>heavily</sup> ~~shaded~~ <sup>shaded</sup> ~~with~~ <sup>with</sup> ~~green~~ <sup>green</sup> ~~ring~~ <sup>ring</sup> ~~of~~ <sup>of</sup> ~~center~~ <sup>center</sup> ~~8-10~~ <sup>8-10</sup> ~~but~~ <sup>but</sup>  
 leaving just 10 outwardly pale. Venter sparse black  
 iridescent. The feet pale. Spicula black. Tub. setae minute  
 One J June 2 1900

Calc. .275 .39 .56 .80 1.14 1.63 2  
 found 3 4 .5 .8 1.15 nothing in can  
 May 1 1900  
 Paid 761 Apr 6 1900

Applied 1/19 ~~light~~ <sup>light</sup> ~~brown~~ <sup>brown</sup> ~~subject~~ <sup>subject</sup> ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 Aug 9-10 1/19 ~~light~~ <sup>light</sup> ~~brown~~ <sup>brown</sup> ~~subject~~ <sup>subject</sup> ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 and ~~concolorous~~ <sup>concolorous</sup> ~~with~~ <sup>with</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 laid on the side of the ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 slightly ~~convex~~ <sup>convex</sup> ~~than~~ <sup>than</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 surface ~~of~~ <sup>of</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 rounded ~~hemispherical~~ <sup>hemispherical</sup> ~~with~~ <sup>with</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 small, surface ~~slightly~~ <sup>slightly</sup> ~~convex~~ <sup>convex</sup> ~~than~~ <sup>than</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 in line, separated ~~from~~ <sup>from</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 Stage 1/19-20 Hd rounded bilobed, 4 moderate  
 up, ~~light~~ <sup>light</sup> ~~brown~~ <sup>brown</sup> ~~subject~~ <sup>subject</sup> ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 and 1/19 ~~light~~ <sup>light</sup> ~~brown~~ <sup>brown</sup> ~~subject~~ <sup>subject</sup> ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 Stage 1/19-20 Hd rounded bilobed, 4 moderate  
 up, ~~light~~ <sup>light</sup> ~~brown~~ <sup>brown</sup> ~~subject~~ <sup>subject</sup> ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 and 1/19 ~~light~~ <sup>light</sup> ~~brown~~ <sup>brown</sup> ~~subject~~ <sup>subject</sup> ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
 Stage 1/19-20 Hd rounded bilobed, 4 moderate  
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 Stage 1/19-20 Hd rounded bilobed, 4 moderate  
 up, ~~light~~ <sup>light</sup> ~~brown~~ <sup>brown</sup> ~~subject~~ <sup>subject</sup> ~~to~~ <sup>to</sup> ~~the~~ <sup>the</sup> ~~cell~~ <sup>cell</sup> ~~in~~ <sup>in</sup> ~~15272~~ <sup>15272</sup>  
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 Stage 1/19-20 Hd rounded bilobed, 4 moderate  
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the 5 not depressed lips; labrum projecting, marked as before but a little pale. Body smooth, the same. On the white of line need growth and 5d black line further lateral as d. face looks much pale depressed (though really not) and different from rest of larva. Feet pale.

Thoracic hair almost absent as in i but iii and v added. ii is separate and weak ia, it and ii a quitted together a little but not as a true hair.

Sept 1st Hd .53. Head, full above, scarcely bilobed not higher than 2. Translucent whitish, shining a black patch on vertex of each lobe, one on face of each arm, over ocelli and a faint dark streak in vertical suture of each, rather flattened. Feet large, spreading, whitish, a faint broken white d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.

5. White stripe is a series of squarish flattened feet on legs. The sides are marked over broken line. 12 only of similar of colorless feet in series of central patches becoming grey-brown. Later green in evening, patch on 9 large, single dorsal the whole found above assembling legs.

Sept 18 Larva to be hibernating. Do not feed, no eat.

Sept 22 Larva to be hibernating. Do not feed, no eat.

Sept 25 Hd .53. Head, full above, scarcely bilobed not higher than 2. Translucent whitish, shining a black patch on vertex of each lobe, one on face of each arm, over ocelli and a faint dark streak in vertical suture of each, rather flattened. Feet large, spreading, whitish, a faint broken white d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.

5. White stripe is a series of squarish flattened feet on legs. The sides are marked over broken line. 12 only of similar of colorless feet in series of central patches becoming grey-brown. Later green in evening, patch on 9 large, single dorsal the whole found above assembling legs.

Sept 27 Hd .53. Head, full above, scarcely bilobed not higher than 2. Translucent whitish, shining a black patch on vertex of each lobe, one on face of each arm, over ocelli and a faint dark streak in vertical suture of each, rather flattened. Feet large, spreading, whitish, a faint broken white d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.

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Call. .29 .42 .60 .85 (1.2 1.7) rat 2  
Held B.S. II 762. Small. Same as before (Held esp)  
Swell CE 235. Cat. no. 15281  
Rock. New Year 371  
Granular eared loops on a tongue of Solidago, aster etc  
Bellport, Aug 7 1899.

Hd 3 Head, full not bilobed, dark brown, sutures & ocelli black, 5 high. Body moderate pale yellow, smooth, d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.

Hd 4 Head, full not bilobed, dark brown, sutures & ocelli black, 5 high. Body moderate pale yellow, smooth, d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.

Hd 5 Head, full not bilobed, dark brown, sutures & ocelli black, 5 high. Body moderate pale yellow, smooth, d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.

Hd 6 Head, full not bilobed, dark brown, sutures & ocelli black, 5 high. Body moderate pale yellow, smooth, d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.

Hd 7 Head, full not bilobed, dark brown, sutures & ocelli black, 5 high. Body moderate pale yellow, smooth, d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.

Hd 8 Head, full not bilobed, dark brown, sutures & ocelli black, 5 high. Body moderate pale yellow, smooth, d. & sv stripe, and a row of 5d brown-grey spots (iii) with a larger reddish one on 5, very faint on 11, and the 5d spot 322 large. Joints colorless, hair pale, fine. ii single short, black spinulose; iii 2 hairs, one long, 5 single got, vi 2 hairs pale. Hair all as before in thorax.



No. 1.0 on exam. largest hd .85. Varies in color  
yellow green, leaf green, whitish green, d. red  
thin absent, dotted or distinct. -762-

763 I Hd. 3 Aug 17 (isolated) Cut No. 15286  
Shed Aug 18. Not 762 but another sp. Hd rounded, water  
moderate yellowish brown shaded at side. 4 on  
body translucent and distinct yellowish a distinct brown d. stripe  
white length and a shaded sv band. The feet dark  
dorsal shields dusky, cth. obscure. Setae short, granular  
pale; tubercles small, brown. Late the male pale  
all anted later with pale brown d. stripe only  
shoulder weakly winged, darker brown.  
Shed Aug 19 Hd 6 mm, slightly bilobed, pale brownish  
eyes black, body moderate, rather robust, cylindrical  
edge a little conical, not shiny pale  
fleshy yellow, a series of sq. brown patches dorsal  
darker. Trace of a sv line on 5-6 the feet  
pale testaceous. Tubercles obsolete, setae short, stiff  
dark with enlarged tips. Wings not winged  
concolorous, not marked & shines.

Aug 28 Hd. 9 Rounded, slightly bilobed, 5 high pale  
testaceous eye black, mouth brown. Body moderate  
moderate, similar to concolorous, setae distinct  
short, stiff, black with enlarged tips. Pale yellow  
slightly green tinted, a narrow broken brown dorsal  
line, arising under sub-arcuate shaped members (the  
point ant.) a short sd band on thorax & trace of  
sv band on abd. Venter clear - sv gold  
slightly whitish feet pale. Other lines & faint  
or distinct brown d. & sd line, joining the dorsal-band  
marks. In one mark all large and a brown sv shade  
band, the brown predominate.

Pupa in a slight webbing in larval bed. Head ended  
pupa, smooth round, abd. tapering. Pale  
whitish brown, a dark brown dorsal line and few  
spots. Spiracles black, legs clear concolorous or  
becoming darker with black on which case the  
spotted, all more numerous on the thorax &  
pale black. L 8.5 mm Cut Sept 3 1899

763 Pupa same shape, 16.5 mm dull yellowish green  
somewhat translucent, legs & abd. later and all a  
crenate brown. d. line dark green. Antennae & cures  
and not dark brown. The

764

Joseph Cut No. 15278 laid one egg Aug 17 1899  
egg regular elliptical, well flattened but not  
angled or with prominent faces, rounded. Covered  
with rounded shallow pits, rather broadly arranged  
the margin forming rounded hexagonal reticulation  
i.e. cell also curved centrally, first shaped  
pale whitish yellow.  $7 \times 4 \times .25$  mm.  
Hatched Aug 19 Hd. 2  $\pm$  with cth very pale reddish.  
Body translucent, scant color, a dark brown sd stripe  
slender: faint on thorax, brown & distinct on abd, but  
obscure on 10-13. A slender sv shade, bearing  
10-13 but feet pale. Was pleased with Solitago flowers.

Aug 21

at egg has a low rounded  
process behind, crenate slender  
venter long side, flat with a  
terminal ridge of long bristles. **Opelt 1400**  
from webby cream like 762.  
763 Taphroschysis ~~apicalis~~ (under)

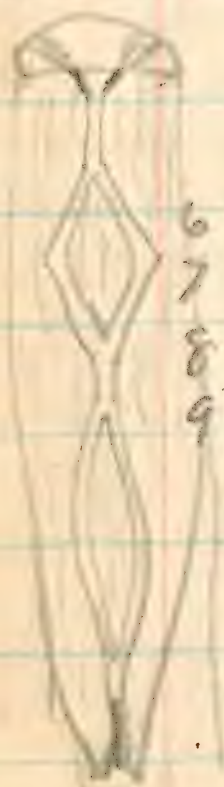


765

*Heterocampa* on black oak

Landrum River Beaufort Aug 21 1899

Just hatched before last stage. Green



larva has <sup>substage</sup> white, thin  
3-anal foot, including  
11-13 a yellowish and  
cutting flesh & brown spots  
on 5, 7. Island on 7-13  
has complete borders  
a brown dash 13.



765 A has a very faint  
pale pulsaty shield 3-  
anal foot all dark  
brown stripes. Brown  
with arch of white patch  
marked on 11

Green  
with 2  
islands  
765

Brown  
with  
one island  
765 A

765 (green form) J Aug 31. Put in pot.

Eat a slight pink hind trunk.

Brown form also J Aug 31.

765 [dead pupa July 12 1900]

765 A out July 7 1900 Cat no 15999

*Heterocampa obliqua*

766

*Heterocampa* on *Pinus dentata*?

Maristown N.J. Aug 24 1899

Hd. 8 left square lobed apex, rounded to a  
long horn curved forward bearing 1 on upper aspect  
before tip; dark brownish black. Body angled at 5-  
12, 12 strongly produced with pulsaty apex. Tubercles  
large, irregular produced, ii of 5-7, 12 & 13 especially  
loby horn like, i always smaller than ii. Body  
shining brown, highest & faint whitish in the region  
of the weak tubercles 3-4 & 9-11 - narrow, than  
pale d. & lat. lines. Tubercles shield & leg plate  
black. Setae long, pale single except vi which has  
a couple of short hairs beside, sv pale whitish,  
forming faint sep. oblique marks.

Shed Aug 28 Hd 1.2 + Same red hair on end of  
neck hairs. Body same, tubercles high horn like  
color very black, washed with translucent  
luteous between 11-12, the white hair as before,  
pale d. & sd and oblique S-V lines. i-ii of 12  
a tower, ii highest. Tubercles very all angle vi  
has 4 hair and many hair on leg shield; iii of 12  
has two other hairs beside the long apical one  
Hairs long, white, stiff. Later produced the mark  
marking appear. Skin firm, white, sd less firm  
at ii sv blotch rising down on ant. side of legs  
the one below iii including the prolonged leg bases  
faint white streaked.

Shed Sept 1 Hd 1.6 Same but white color more  
extended on 7-8 in fine streaks. Hd all brown  
black shiny, horned as before body brown black,  
just 2 pairs of tho. feet and 11-12 outer d.  
marking to i 12 luteous. D. & sd fine white  
line broken on 2-5 and somewhat distal  
on 12; a sv white patch on 6 just a series of



delicate, slightly line on the base of the foot,  
strongest ant. foot. White on 8 foot, 9 etc.  
pale, infusant to dorsum becoming a pale-  
vibrant white shade. Same fine hairs  
on dorsum of 13. Tubercles curved forward as  
before; body slender, strongly angled at 5-  
and 12. 12 with a high hump. Bases of legs  
thick, hairy along by plates, vi single and large  
among these 2d (3) hump. Two hump on base  
of legs, tubercle iii, 12 and several on 13.

Small larva on vi of 5 & 6. If not 2d hump the  
ant. hair of vi strongly hairy.

Shed Sept 6 Hd 2.3± Tubercles all decidedly shorter  
the head hump also relatively shorter though  
still about as large as before. Tubercles hump  
rounded except the dorsal one. of prominent parts  
5-7 and 12 which are curved, slightly elevated.  
i-ii of 12 in a space about alike. Coloration  
as before. The two long hairs of the prominent ant.  
central tubercle of 12 are enlarged in  
the mouth parts of the cast head case. On  
base of leg 7, vi is single with one 2' hump, and  
a group of by shield; the base of leg 7 is protuberant  
and swollen. On legs 8-10 the base is shield  
hairy up to and surrounding the single large vi.  
Later color of mat. Dorsum of thorax and 12 in  
front hump brown, the rest nearly black. 9  
nearly entire grayish white.

Shed Sept 13 Hd round, not humped tubercles all  
small but well humped and angled. Bases  
of all feet hairy. Members the same (see blow  
larva) except 12 hump all black as also thorax  
dorsally.

767

Loopers commonly on flowers of Solidago  
Belmont Aug. 27 1899.

Hd 1.0 pale greenish or yellowish with 3 more or less  
distinct stripe of brown dots fine thick over ~~hump~~  
narrowing on face reaching apex + base of 3 ant.  
base antennae. Stelli dark. Rens, feet, scarcely  
bilobed, moderate. Body moderate, somewhat  
robust, uniform s-v ridge a little prominent,  
the tubercles distinct and with enlarged bases  
giving the ventral esp. of lat. region a humpy  
appearance. Venter color rich yellow brown  
shaded with brown; add. dorsal band indented slightly  
at dentice band also indented seg. not humped  
appearing as blotches 5-9, a clear space followed  
by a heavy s-v band. Tubercles black on  
pale space, setae short stiff, pale feet pale.  
Some variation. One has line joined in broad s-d  
to stelli; another greenish with the marks faint.  
Hd 1.0 and whitish yellowish marks add. (faint) s-d  
and s-v (distinct) brown hump, mouth slightly and  
not blotched. All pale and less distinctly marked.  
Horned pupa, free except tail <sup>head up</sup> and slight <sup>by stelli</sup>  
wells. Cylindrical, tapering behind; a ridge at upper  
edge of wing case runs forward and is produced into  
a blunt horn above the eye directed forward.  
Cremaster a small knob of recurved bristles fastened  
in a few threads. Green, a red-brown line along  
ridge, a horn and connecting them by a curved  
line across dorsum; cremaster brown. Black dots  
represent tubercles. None rarely all light red-brown  
band between horn & cremaster darker, wing case  
blackish. Black dots fine.

Sept 11 1899 *Diptalia insularia* Guen

Locke Sam 336 pupa  
Hubert Ent Ann III 175 as good a larva form  
Hd 1.0 5347 1/2 3/5



768

Worms in flower of Solidago. Bellefonte, Pa.

Sept 5 1899. When small, all yellow.

Hd 1.2 round, retracted below 2. Pale yellow. Ocelli black. Body cylindrical, rounded, 12 not enlarged, skin densely granular. Tubercles distinct, black, setae small. IV 5 app. cone. 6th 12 above small, 11 1/2, 12 lower cone. V almost pale and 11, 11 above pale. Sides not compressed. Yellow, a shaded purplish black d. band; a narrow lat. band with an area on each side of each seg. nearly touching d. band & separated from it up by a white shade. Both nodules sd. band above; a lateral shade below reaching spiracle. An obscure white s-v, line over v. Feet & venter pale. Cth with add. c lat. black shades, separate & faint whitish ones flesh involved.

Hd 1.75 Same. Body with marks more pronounced. Yellow, the dorsal ground brighter. D. band broken into a series of transverse dashes on ant. part of seg. Sd band obsolete, the arms descending an oblique curved black shades narrow, separated from d. dashes diffuse below, touching tubercle i; ii free in yellow space. A small oblique black patch over iii-iv; v, vi a dash a light black. S-v free, brighter yellow. Cth as before. The markings on the front half body more flesh pale.



769

J. Apateles on beach, Catix John Bridge, Md. Sept 14 1899. All as in 753 except color which is very pale almost colorless transparent.

Hd 1.6 pale greenish white, labrum white. Body colorless whitish, dorsal tubercles (i-iii) round faint sd stripe 12-13 pale yellow. Brown on both prolegs & crown, these on body small cone, dorsal crown, all as in 753.

Hd 2.6 Same, trace of brown line a space of holes very faintly greenish from food, pale and transparent. dorsal tubercles and faint stripe 12-13 pale yellow. Trace of white sd stripe broken into oblique marks about i, ii. Tubercles all small, cone, single haired.

Hd 4. Whitish, the face of holes hardly reticulate with dark red, leaving the ground in little mottled patches, sides and a pale. Body pale yellowish, shaded with green from food, dorsal vessel hardly dark, pulsating. Sd as lat bands ill-defined, pale yellow, broken in to spots and patches, surrounding i-ii oblique and a 12 cth forming a narrow distinct patch. Traces of d. line a brown. Tubercles small, button-like dorsal ones pale yellow.

As I gradually turn a pale leaf brown, the white marks looking milky chocolate, dorsal darker. Tubercles small, pale yellow.

Cont July 2 1900 Cat 15976

Hamamelis. pale form



Calc. 43 .61 .88 1.26 1.8 2.57 2.0 Imago Oct 19

Pupa cylindrical, slightly tapering, head forward the thorax sloping. Flesh colored, many white, trace of the reddish sd line of larva and rather numerous black spots on darker sd & d. 778 spots a ventral stripe on each side and edge, caeca esp costa of 12.

Eggs of *Scaphis fulvicollis* from L.N. Joutel, N.Y. laid in round glass blocks. Yolk conical the base flat, more than hemispherical.

Shiny pale yellow surface very finely nearly hexagonally reticulate, the lines finer, darker in the light areas, irregularly hexagonal. D. 7 mm. Hatched Sept 15. Hd. conical, slightly lobed, pale whitish shading to brown on apex of lobes, a large rounded black spot on face of each lobe and a small smaller one on ocelli. w. 4 mm. Body whitish with faint brown, the tubercles and anal plate dark slaty. Hair long spinulose black. Hair all single, no subspines.



Sept 21 Hd. 6± rounded lobed, full, pale transparent luteous a large black patch on front of each lobe above, ocelli black, mouth dark brown, cth small transverse; wnt. single haired. ii-iii many haired. Body translucent faintly luteous, a broad shaded brown stripe, undulating irregular on the transverse, wnt large, columnar but with small black tubercles on each hair. Hair black & pale spinulose, pointed, roots short. On 3-4 only are large set wnt. and a narrower, irregular belt shading from broad wings about white III. iv single, a very small wnt. v a large wnt, but single haired. vi large, a patch of hairs on lip shield. A narrow dark line on vertical surface.

Sept 24 Hd. 7.5 (w. 6, less than 8) rounded, slightly lobed shading reddish whitish, a black patch on face of each lobe above a small one on ocelli and very small one on apex of mouth brown. Body cylindrical acutiform wnt distinct wnt & normal feet. Scarcely any hair on 2, 3-4 and 12-13 much larger than on rest of body. Hair thin fine spinulose. Pale, darker on 3-4.

Body dorsally dull reddish, a darker dorsal

\* from the large wnt. latibellia and IV+V; II & III are present as single hairs. Post from II, III 13 and anal plate wnt. wnt all surrounded by whitish rings. 2 shrank up as as to be concealed; no hair from it.

Sept 21 on the cover, vent thin wnt hair pale brown a pale set and pale tubercle and trace of a lat in above iii; below iii including sv and feet pale whitish, sharply marked from dorsal color. wnt black, ii, iii, v and vi large, i small, all many hairs except i and v which have only 2 or 3 hairs. iv a tiny rudiment behind the spiracles, just perceptible, joint & wnt contracted, the cth indistinct, 3 a little elevated above 2. On thorax wnt as before! It is quite visible.

Sept 29 Hd 1.2 lobed full, shiny pale luteous a black spot on each lobe before one & a small one on vertical surface. Ocelli narrow black, wnt of slightly brown. Body nearly black, a faint pale luteous sd & sv lines, straight & even the sv the wnt, both obscure. 2 much contracted, the long hairs of 3 overhanging head. All hair minute, black & white. Wnt all large, arched form, many hairs except iv which is obsolete, i a large wnt, smaller than ii; iii largest & all. wnt dark gray with black hair tubercles! All feet black.

Sept 3 Hd 1.8 full & rounded, occiput & all lobed very pale luteous brown, the small & and a transverse band adjoining it & many ocelli as well as vertical antennae narrow black. Labrum antennae & mouth pale. Body black, rather gray as above 2 which is wnt with hairs except sv wnt, cth shiny small. Lines all obsolete, sv fold a little pale; the feet feet black wnt. on pale. wnt large black, hair black & white, overhanging a group of large ones overhanging head and feet cth of occiput. Antennae pale, tiny head spot on face of each lobe & apex; ocelli & 2 groups narrow black, but a vertical surface. wnt large, iv a rudiment near hairless. Black, sd line faint & wnt pale brown; sv line whitish in a broad pale zigzag area that extends from iv to venter. As body pale with growth a dark d. line appears and a shade below the sd and above the sv stripe.

Sept 6 Hd 2.6 now full, rather large, not lobed, a small shiny reddish luteous brown with black as before. Maxillary piece pale. Body acutiform, 2 contracted, wnt large low black, iv obsolete. Dorsum dark gray with shaded black d. line; sd line distinct, bright narrow shaded esp. feet on legs sides black; substing line pale yellow a little transverse shaded like sd. Venter gray, feet very pale. Long hairs on 3, 4 & 13 black, of 12 pale i-iii short, perceptible, sv hairs overhanging & spreading.



771

Sept 21-22 1899, back yard Washington D.C.  
*Synchlora glaucaria* in  
 elliptical, strongly flattened on two sides, the flat  
 faces concave, between the edges well rounded  
 and a little rounded; side view slightly wedge  
 shaped, the broader end truncate roundedly and  
 elevated in its center so as to be almost quite  
 rounded like the narrow end and is so except for  
 a slight annular flattening noticeable from side  
 view. This like a cable than the oak of (13) as the  
 sides are rounded, not  $\perp$ . Surface all finely hexagonal  
 reticulate, not very strongly raised. Pale slightly green  
 yellow, shiny. Size .6 x .5 x .3 mm. smooth edges  
 faint sharp pretty good cables. Later pale red

Hatched Sept 28 went in flower of aster & got covered with  
 pieces of chrysalis & pollen. Hd round, slightly bilobed, pale  
 brown, another with paler with white above greenish  
 setae. Body cylindrical smooth, tubercles rather large  
 especially iii. Dark brown-black, another with snuff  
 yellow, esp. on 12-13 which looks lighter, trace of a dark  
 d. line. which is cylindrical, prolonged & with conical tip.  
 Setae white. On abd short with flattened enlarged tip except  
 iii which is very long (5-9) and with bulbous tip. This seta  
 is slender and in the base principally the fragments adhere.  
 8d setae of thorax and 12 also prolonged but much shorter  
 than the long ones of 5-9. Skin smooth rather thick, thick  
 on 3-5 (10-13)

Shed II Oct 5 Hd 40 (th. hd 25) rounded, slightly bilobed  
 color of body red, as before, the setae glaucous but  
 small slender iii still the longest and arising from  
 somewhat funnel-shaped bases. Color dull brown or whitish  
 ground speckled with brown. Skin granular roughened  
 same all marked with fragments of crumpled object.

Shed III 13 Hd 8 (th. hd 15) rounded bilobed, smooth dark  
 shagreened, setae obscure, lateral whitish spiculate  
 with brown beamed near anterior and a pale d. line  
 long thick robust, do not slightly flattened tubercles on  
 integument, setae small except iii which is large  
 arises from an elongate tubercle. No marked d. line.  
 projection, the slight angular elevation round  
 alike for all the tubercles. Brown-brown, dorsal

front with white granules, an obscure double white  
 d. line ~~appearing~~ from trace of a white line. band  
 on the irregular elevation just Tubercles pale  
 and on small pl. c. and feet setae white.  
 all dense except thorax and 12-13 covered with fragments  
 of flowers which adhere strongly to the short stiff  
 seta iii. The long tubercle is spinulose. Feet pale.

Shed Oct 20 Hd 60 Body short and thick, angular from the  
 elevation but without spinules Tubercle i and ii are  
 light white ones with short stiff setae but with no  
 elevation of the body; ~~iii~~ <sup>iv</sup> is a large cone with slender  
 seta the tubercle radiating spinulose in its shape and  
 arises from a slight lateral elevation & bending of  
 the body; before and a little below it is a small  
 smooth tubercle cone becoming ~~iii~~ <sup>iv</sup> and ~~v~~ <sup>vi</sup> nearly ~~ix~~ <sup>vi</sup>

~~about 1/2 between iii and iv~~ both with  
 cones similar to ~~iii~~ <sup>iv</sup> ~~iv~~ <sup>v</sup> ~~v~~ <sup>vi</sup> ~~vi~~ <sup>vii</sup> ~~vii~~ <sup>viii</sup> ~~viii~~ <sup>ix</sup> ~~ix~~ <sup>x</sup> ~~x~~ <sup>xi</sup> ~~xi~~ <sup>xii</sup> ~~xii~~ <sup>xiii</sup> ~~xiii~~ <sup>xiv</sup> ~~xiv~~ <sup>xv</sup> ~~xv~~ <sup>xvi</sup> ~~xvi~~ <sup>xvii</sup> ~~xvii~~ <sup>xviii</sup> ~~xviii~~ <sup>xix</sup> ~~xix~~ <sup>xx</sup> ~~xx~~ <sup>xxi</sup> ~~xxi~~ <sup>xxii</sup> ~~xxii~~ <sup>xxiii</sup> ~~xxiii~~ <sup>xxiv</sup> ~~xxiv~~ <sup>xxv</sup> ~~xxv~~ <sup>xxvi</sup> ~~xxvi~~ <sup>xxvii</sup> ~~xxvii~~ <sup>xxviii</sup> ~~xxviii~~ <sup>xxix</sup> ~~xxix~~ <sup>xxx</sup> ~~xxx~~ <sup>xxxi</sup> ~~xxxi~~ <sup>xxxii</sup> ~~xxxii~~ <sup>xxxiii</sup> ~~xxxiii~~ <sup>xxxiv</sup> ~~xxxiv~~ <sup>xxxv</sup> ~~xxxv~~ <sup>xxxvi</sup> ~~xxxvi~~ <sup>xxxvii</sup> ~~xxxvii~~ <sup>xxxviii</sup> ~~xxxviii~~ <sup>xxxix</sup> ~~xxxix~~ <sup>xl</sup> ~~xl~~ <sup>xli</sup> ~~xli~~ <sup>xlii</sup> ~~xlii~~ <sup>xliii</sup> ~~xliii~~ <sup>xliv</sup> ~~xliv~~ <sup>xlv</sup> ~~xlv~~ <sup>xlvi</sup> ~~xlvi~~ <sup>xlvii</sup> ~~xlvii~~ <sup>xlviii</sup> ~~xlviii~~ <sup>xlvix</sup> ~~xlvix~~ <sup>cl</sup> ~~cl~~ <sup>cli</sup> ~~cli~~ <sup>clii</sup> ~~clii~~ <sup>cliii</sup> ~~cliii~~ <sup>cliv</sup> ~~cliv~~ <sup>clv</sup> ~~clv~~ <sup>clvi</sup> ~~clvi~~ <sup>clvii</sup> ~~clvii~~ <sup>clviii</sup> ~~clviii~~ <sup>clvix</sup> ~~clvix~~ <sup>cl</sup> ~~cl~~ <sup>cli</sup> ~~cli~~ <sup>clii</sup> ~~clii~~ <sup>cliii</sup> ~~cliii~~ <sup>cliv</sup> ~~cliv~~ <sup>clv</sup> ~~clv~~ <sup>clvi</sup> ~~clvi~~ <sup>clvii</sup> ~~clvii~~ <sup>clviii</sup> ~~clviii~~ <sup>clvix</sup> ~~clvix~~ <sup>cl</sup> ~~cl~~ <sup>cli</sup> ~~cli~~ <sup>clii</sup> ~~clii~~ <sup>cliii</sup> ~~cliii~~ <sup>cliv</sup> ~~cliv~~ <sup>clv</sup> ~~clv~~ <sup>clvi</sup> ~~clvi~~ <sup>clvii</sup> ~~clvii~~ <sup>clviii</sup> ~~clviii~~ <sup>clvix</sup> ~~clvix~~ <sup>cl</sup> ~~cl~~ <sup>cli</sup> ~~cli~~ <sup>clii</sup> ~~clii~~ 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Copy for Mr. Chittenden  
Sept. 22 (Apr) Oct 15 1899

772

*Lophyrus fuscipennis*, eggs from Mr. Chittenden  
hatching Sept. 22 1899. Eggs in a close large double  
one larger above the other, apex or base covered with fine  
gray down from mother. Spheroidal, well rounded,  
the base a little flatter than the apex, uniform  
vertical ribs numerous ( $\pm 60$ ) and small, joined by  
distinct cross-bars as large as the ribs themselves  
and forming rectangles or slightly hexagonal areas  
above the ribs do not diminish till near vertex when  
they become converted into reticulation smaller  
toward the micropyle. Pearl pink. D. 5 mm  
Stage 1 Head rounded bilobed, about as high as wide  
strongly  $\frac{1}{2}$  as high as head without gnathopod  
pieces. Labia quadrate with mandible projecting  
strongly black. Antennae rudimentary pale. Ant.  
short, furnished w.  $25 \pm$  ann. Cilia straight before rounded  
behind, set black bearing 4 setae, 2 more (of which one  
oceanic visible) detached just laterad. Mesopodulae &  
sub tubercle with hairs. Anal plate serrated  
dusky blackish. Body colorate, slightly translucent  
tubercle large, round black with very distinct short  
black pointed setae. There are normal no subp.  
On 3-4 is a small one, 16, 17 large, all well sep-  
arated & equally spaced; 18 & 19 single bands (18 & 19 absent)  
On abd. i, ii, iii large, equal, 1-12 on 12 approximate of i  
a square, 18 behind the spiracle, slightly below the middle  
aperture, 1 with v as large as the dorsal ones. Leg  
shields small, quadrate black, ventral tubercle small,  
also black. Feet of 7 & 8 slightly smaller than 9 & 10. Labia  
all green from food.

Sept 27 The same, a little thicker and more distorted  
enlarged to 4 mm, slightly bilobed shiny black. Cilia black  
and flat not wavy. Pale like before. White with faint  
brown & d. sd. lat & sty line grayish at side. Tubercle  
large black & distinct as before. The subp. present. Hair  
shiny stiff black. The feet black. The pale & dark shields.  
Sept 30 to 6.5 mm shiny black. Sides very fine  
and surface of pale between. Shields black shiny black  
tubercle large setae coarse black. Body greenish gray &  
d sd line whitish straight narrow & even; green color  
darker lat. and a blackish shade touching

17, defined ventrad. A broad pale subp. band.  
Subp. greenish green shading to dorsal pale  
center. Body uniform, 12 very slightly enlarged.  
Sept 30 to 1.1 Black. Gnathopod pieces & labium  
pale whitish sides no pale but filled in with  
black mottling. Rounded, slightly bilobed shiny  
Cilia black directed not strongly curved, anal plate  
dusky. Tubercle large black. Body greenish gray  
d, sd (11) and trace of narrow lat. line pale and  
before 55 line brown, white mottled with green  
and divided by a central band of thin color  
Feet dusky. Labia distinct black rather long  
all rotted Oct 8

Sept 30 to 1.8 mm. Slightly bilobed & large, the  
gnathopod pieces nearly attaining the vertex; mandible  
prominent. Brown black with whitish sides pale esp  
post. Joint & base white & also ventral anterior labium  
pale. Body cylindrical around 12 very slightly enlarged. Feet  
gnathopod large. Above dark brown, & white distinct  
with pale, beneath some green but also brown mottled  
2. Line pale, nearly obsolete except on dorsal and anal feet  
sd distinct, whitish straight & white before 12-13. Subp.  
band sharp edged, not enclosing spiracles, white, nearly  
filled in with dark red mottling. Feet all dusky  
Cilia dark black, not strongly curved, and by d. & sd line  
anal pl. dusky with 2 white spots front of broken d. line  
Tubercle distinct, black, with short stiff black setae.  
Oct 3.0 mm. Round, black, a large pale stain reaching  $\frac{3}{4}$  to vertex  
from base, sides from vertex with pale, entire white, all  
as before. Head as before, 12 very slightly enlarged, feet  
equal. Bluish brown above, varying a shade, the bottom  
space extending to the dorsal vertex pale, greenish &  
dorsal mottled. 2. Line whitish as broad as sd & regular  
and much thinner. sd fainter mottled, straight.  
The pale mottled. 1. Line are brown below 1 & 2 and  
across iii, suggesting obsolete lines; slight black shade  
under sd below. Subp. brown, sharp, the edge a  
dark irregular white filled in with pale red mottling.  
Feet all dusky. Cilia black, very narrow and by white  
d & sd line. Anal plate dusky cut by pale d line with  
a constriction ant. Tubercle conical, distinct, dark  
brown, longest on 12-13. iv 5 upper 4, 6 7 below middle, 8 mid  
9 above, 10 upper 4, 11  $\frac{1}{2}$  & v, 12 lower 4. Setae short rather  
stiff dark. (Sept 29 & 30)



A diagram showing a triangular arrangement of 10 circles. The top row has 1 circle, the second row has 2 circles, the third row has 3 circles, the fourth row has 4 circles, and the bottom row has 5 circles. This represents the 5th triangular number,  $T_5 = 10$ .

1899. 50 cocoons. moth emerging Nov 1899

finely reticulated with raised lines, angularly & irregularly hexagonal;  $2.2 \times 1.2 \times .1$  mm. Laid in rather large masses overlapping like shingles the whole mass strongly shiny dark ochre yellow, rather opaque, the margins margin translucent, colorless. Very greatly resembles Silene reticulata eggs which are also dark yellow.

all sat on a branch close together and sat still.

ShII DEE somewhat shorter & sparser, elongate elliptical

① 3-5-11

Dec 7 1.4 shd ate orange greyish brown  
" 8 1.8 cat **III** Dec 13 somewhat flattened like malee,  
" 9 2.2 " Rainbow, distinctly elliptical. The sides are longer  
" 10 " " 1/2 inch convex end rounded; 1/2 inch space brown  
" 11 " " subequal, flat, dorsal arches a little, sides nar-  
" 12 " " row, and ends; 5 or 6 small unattached  
Horns 3 to 11-12 stout, conical, rather long, fully  
" 13 " " twice the short ones, 6 very small but 7-10, 13 and  
" 14 2.5 cat the 2 horns almost apical, short, conical tapering, about  
" 15 2.6 " as long as basal width; all densely appressed. Body  
" 16 2.8 " as long as a narrow blackish d line 6-11 or 6-9 covered by  
" 17 3.1 " 5 faint blackish hairs in the dorsal incisions; a  
" 18 " " rather distinct black blotch in lat. space enclosing  
" 19 " " the def. space (4) in the upper portion. Anterior in  
" 20 3.0 cat the incision 7-8; it is furcate on the lower side  
" 21 4.0 " Skin finely streptose, empty, the retrosternite. Thorax  
" 22 4.2 " the hump distinctly as from low, almost flat round granules.  
" 23 4.3 " a large black patch on each side, extending behind  
" 24 " " 3 when the hump is retracted. Later the dorsal markings  
" 25 " " wholly or partly disappear but the lat. spot remains.  
" 26 5.4 cat **IV** Dec 19 distinctly flattened and elliptical. All sp  
" 27 5.5 " brown, narrowly not at the ends, but space more  
" 28 6.0 " elliptical, 5 or 6 very small. Ridge, 3-5 furrowed with  
" 29 " " thin brown distinct line and some heavy one, black and  
" 30 " " line of 5 prominent, rounded. 5 of 3, 4, 5 successively  
" 31 " " larger 5 line as long as 3. 6-10 esp 6-10 very  
" 32 6.6 " smooth, 11, 12, 13 successively smaller, reaching  
" 33 7.5 " the ant. horns. But now all are small, a little  
" 34 8.0 " longer post, 3, 4 even smaller than the rest  
" 35 8.5 " Horns all thick, rather blunt, densely appressed  
" 36 9.0 " the apices very sharp with black tips. Greenish  
" 37 9.5 " yellow, a broken blackish green narrow d line  
" 38 10.2 " cut by broken transverse black bars which form  
" 39 11.0 " large blotches around def. space (1); (2) represented  
" 40 11.5 " by tiny black dots somewhat diffuse & scattered  
" 41 12.0 " punctate on 3 & 4. On the sides a faint greenish



extend forward on 7

line in the middle of lat area a large black spot about (14) of 7-8 and smaller ones on 4-5 and 10-11. That of 7-8 is quadrilateral and all are made of very black pigment. (4) (5) & (6) very minute and black dots and perhaps (3) but I do not distinguish it. There is a trace of a pinkish color in the large sd. horns. Skin very fine granular becoming sparser s-v, but the granular shagreen wrinkles (like texture of sea urchin) persist around the bases of the horns. The granules are distinct in the exposed parts of the thorax. C-sh large, black. The black marks are pulchellus and irregular in shape differing in different larvae.

Stage 25 shape as before & all no essential change. Greenish yellow, dorsal space (1) & (4) whitish, broadly surrounded with black, the other spaces not as broad, faintly indicated. All pores except on 12-13, hardly pores on 3-4 and indistinctly so on 4-5. On the sides the spots are rather irregular but there are no conspicuously large ones as before, (4) being surrounded by black on all segs, round on 12-13 and 14-15, (6) also defined on 12-13 segs.

Horns 3-4 11-12 long, all the rest short, 6 & 10 esp. all are all fully spined with long spines. Segs 4-5 are a purplish tint, due to the color of the spines, the others are yellowish, clear less opaque and less greenish than the body. Skin granular, the granules rather sparse and fine shagreen between, entire even spinulose points esp. s-v and dorsally on the sides, where each horn plate is present in the base (3-5 and), elsewhere clear. The smallest horn is (6) which has not yet begun to grow. C-sh large, black the rim smooth with setae. The pig. around is more yellowish & opaque in the center of the segs d. & lat. The long horns are about as long as diameter of body, very prominent at end of stage the d. space and lat. above horns are filled in with horns of light green pigment falling much of seg. 4-5 except on 3 & 4 when they are narrower. Long horns faint purplish.

Stage 31 Somewhat flattened, small space round, great a little concave, curving over at the ends. Lat. space nearly 1. Lat. ridge purplish, s-v space small, attracted. Horns 5 & 11 moderate, long, about 1/2 diameter of body but shorter than before (absolutely) 3, 4 & 12 short than 5 & 11. Lateral mandibles about as long as wide, subequal 6 & 10 very small, 8 small, 7 & 9 a little longer, all inconspicuous. Horns all densely spined all horns except (6) & (10) faintly

purplish. Bold bluish green except for an opaque yellow-green dorsal bluish green covering of space 5 post-12 and lat 3 post-12 continues except for horns and def. spot. Seg. 4-5 are well marked; spaces (1) and (4) pale strongly shaded with black. Joint 2 smooth, slightly purplish C-sh. black. Skin coarser densely covered with fine spinules, most about spined. On the yellow-green all are colorless but on the blue green they are black esp. dorsally 3-5. Only a few black spinules on the s-v the green & blue above base lat horns. A distinct ring of black spinules around base of horn (1) & (11) as well as on 4 & 5. The horns long than during the stage, are distinctly purple (except (6) & (10)) and a purple shade appears in dorsum of 3 & 4 centrally in the blue green.

Stage 32 No essential change except the presence of a yellowish tinge to the dorsal green and the caltropes, shape as before, the horns all a little shorter and thicker at first. Subhorn of 5-10 present as before, set several spined. Joint 2 purplish, setae before spinulose on the sides, C-sh dark black. Dorsal yellow green, bluish yellow on the edge all around including a ring about the sd. horn of 11. and ventrals the of a fine line of black spinules. Horns present except (5) & (11) which are cold blue green and (6) & (10) which are nearly colorless. (6) has only 3 & 4 spines, space salmon colored with black tips. Space (1) & (4) pale narrowly black edged. Patches of caltropes on segs of lat horns 6-12 and also on lat 4 and over a few on top of horn (1) 5, 11 and 12 and a distinct patch on 13. Skin spinulose as before. Dorsum of 3-4 shaded with purplish as before. The yellowish bluish reaches middle of joint 4 & space 1, it does not extend to the sides & exactly the (5) horn nearly 1/2 covered by joint touch base of (3); its base edge yellow. Subhorn of 5-10 slightly spined, just away (6) is above (12) & horn 11 found slightly spined over horn (12) and dorsally include the ring of lat. of (1) on 12-13. It completely surrounds the horn (11) but does not appear to do so to (6) & (10) as they are concolorous or transparent. The yellow tinge about the joint that about the edge below-post to the horn & head pea, joint brown and several brown blotches about the s and s-v. Antennae long, the last joint properly its length beyond mouth and as long as the preceding. Stage 34 (unspined) as before, but horns (1) & (4) and 12 as well as 5 and 11 are blue green, the others still purplish; there is a narrow very dark green edge to the bluish outside the yellow and small & imperfect patches



new of black spinules

of end spinules about ①13 and ②12. ① horns 6 are obsolete represented by red 1 setae. 7-9 are still distinct, 10 is small about as 6 was before. A white line along s-v edge. Abdomen as before, shape of max. horn about same, the largest about as long as wide at base, spinous salmonea colored with black tips. Dorsum of 5-5 purple shading to green on edges, s-v are clear blue green. Blended light opaque yellow green shading to yellow about the edges varying downward as to amount of purple between the antennae horns. Glanular dots ②4-12 and ①13; end spinules brown. Horns ①5-11 are blue, shading dark green at base. Stern spinules black dots 3-5 and about edge of flange; elsewhere colorless. Sh. hd 1.5 mm. 4th caltrop on end of horn ①5-11. The spinous very dense. Horns ①7-10 clear white. Yate horn ①5-11 the ant. blue ones, the rest being pinkish.

Jan 21 13 1/2 hd 13 1/2 (Jutea isolated again) no change. The det. spinous patches still narrow trans. lines only. Hd 2.0 mm (sh. hd 1.8). Caltropes distinct patches ②4, 6-12 and ①13, practically absent elsewhere. Another reached 20 mm. in this stage.

Feb 1 14 1/2 hd 14 1/2 (Jutea isolated again) no accidental change. Body of detestable spinous on a little longer, sd horn ①6-10 small, narrow, rudimentary ones with narrow vth with 5 to 8 spinous. Hd 2.4 mm ± caltropes also on last horn 3. Patches more abundant 3-12 larger post, the largest on sd horn ①13.

Mar 1 15 1/2 hd 15 1/2 (Jutea isolated again) no change. Hd 2.8 mm. Caltropes on sd horn ①6-10 no change. Hd spinous good dark bands now around patches. Horns short, not as high as wide. Sd horn ①6-10 without spinous except ①8 & ①10 have one or 9 spinous on their segs. D. flange edged broad yellow, narrow black green, black points ①14/16. Dorsum 3-8 purple. Horns all more or less blue, spinous salmonea. Side ② dark green, s-v ridge lighter with white line. 2 in front pinkish with black dots into 2 narrow black trans. lines. Hd 3.5 (sh. hd 2.6) divergent.

Apr 1 16 1/2 hd 16 1/2 (Jutea isolated again) no change. Hd 3.5 (sh. hd 2.6) divergent. Shape as described, dorsum of 2-5 oblique flattened rest of body well rounded over, rounded behind the dorsum (see before 7/10).



774

Spinous as a low dark rounded broad plant found on ocean Anastasia Is., St Augustine Fla. White sandy, the youngest plants there. Some of a leaf on upper side by edges. 2 spinous with. No spinous from without. Hd 1.1 shiny black & to vertex, paraclypeal piece, apex and labrum pale, labrum, ①st very large black marking bisected partly c s-v midvent large, head cylindrical, last segs much tapering, ①st slender normal. Opaque yellowish white from feet (or parasitic) tubercles markedly large black, anal plate pale, dark on lateral edges. Hd 5+ all black body slightly green, streaks with white about the tubercles, otherwise same.

Hd 1.1 (not wrong?) Hd 1.1 all black & the feet. Body slightly greenish, streaks with more opaque white about the tubercles.

Hd 8 Same. Hd 6 n. 53-

Calc. .26 .38 .54 .77 1.1 1.57 7/10

Hd 3 Hd 3 (sh. too fat black; tubercles small & with anal pl. blackish. Body white, rather opaque. Crops Jan 12 (sh. hd 1.1) Abt. 1.1, coarsen, mites, the crops forming a slight angle below black, the coarsen shiny, abd dull, s. narrow, narrow, broadly c from wing coarsen narrow pale brown more on the beach near ocean Palm Beach Fla Jan 13 1900. Only purpose found food is *Argyrothamnia blodgettii* Torr (Mr. Kinsal).

Apr Jan 20 1900 Cat. no. 15318



Feeds exposed in leaves spinning a delicate  
 loose inconspicuous white web. Solitary.

see King 775

On *Sophora tomentosa* - Palm Beach Fla Jan 11, 1900

Look them at first for *Metathesia bella*.

Hd bilobed, lobes broad, full, paraspines to  
 vertex, antennae as long as mandible.

Shiny black, labrum pale brown; w. 2.8 mm.  
 The feet black, rings white; abd. slender  
 green, mottled with a white, broad dorsal outline.

Body rather long, uniform, cylindrical. Cth &  
 toward plate jet black, brown with central white  
 line & sd dash; later with median irregular  
 white. Lat. margin white. Body transverse  
 say green or dull orange-green. On large  
 tubercles white & black - i & ii black in

by a white spot above & below,  
 iii similar but on brown white  
 spot includes spiracle, the  
 as a white line before and a  
 lobe to include iii &

is in a long white streak on  
 gold which surrounds it. vi is in the upper part  
 of a white patch, vii black at edge, but  
 broken about the 3 setae. The tubercle part  
 surrounded by white, the edging touching graft  
 vi which is narrow & separated by a yellow & white  
 streak on sd fls. anal feet with black bases

Oct Feb 16 1900. Cat no 15397-8

*Myioma rufocincta*

776 Outman 7 Cat 15790

Rooted eggs by ♀ 15296 Palm Beach Fla Jan 11-12 '00  
 Spheroidal, very slightly flattened above & below,  
 symmetrical; about 24 hrs. sharp vertical ribs, with  
 diminishing & numerous small dimples ventrally when all  
 set. are bare fine & obscure, these with vertical  
 reticulation on visible to lines, seen under 1/2 inch.  
 S. 7 mm. Slightly greenish gray, not shining.

Late a visible dark red blotch and irregular lat ring.  
 Hatched Jan 15. Hatched wildly about but quickly ate grass  
 (the grass) Hd bilobed, rounded, full, free from 2, 3 small.

Shiny black, brown tinted; ocelli black; w. 3 mm.  
 Body slender, thread-like, feet on 9, 10 & 13. Colorless trans.  
 not green; shields all concolorous & inconspicuous. Tubercle  
 smaller than black. A s-d i-ii, lat (above iii) and stig (iv)

on brown lines. Central segs. long drawn out, the  
 tubercle serrate. Thoracic and  
 9-13 normal, not elongate. Cth with  
 2 detached setae on post. corners, 4  
 on shield: greenish, concolorous. Hd setae  
 normal, clipped & paraclypeal on all  
 anal feet directed posteriorly, blackish  
 outwardly. 12-11 very small, the seg is weak.

Antennae brown lines more distinct, 2-13 with line on anal foot.  
 Stage Jan 23 Hd .5 round bilobed, full, cheeks below  
 square, 1 above middle of front. whitish, green tinted  
 & over black brown stripes on each lobe. The 2 most median  
 setae join above, diverge below, one to jaw, other to <sup>antennae</sup>  
 other join 3rd at <sup>ant.</sup> which then runs to back of hd.  
 bilobed; 4th on lower edge of cheek behind ocell. is  
 double the end of <sup>approximate</sup> forming a pointed ellipse.

Body slender, uniform, a little flat, abd. feet on 9, 10  
 & 13, the latter directed post. 3 brown stripes on  
 each side on all 2-13 the shields variable and  
 unimpaired. S-d (i-ii), lat, stig (iii-iv) with 2 pointed  
 & v lines on vi and vii segs. situated below the sd  
 field and in ventral position. Tubercles smaller black  
 well separated on central segs. is above spiracle nearly  
 as line with iii. Setae dusky; feet pale.



Jan 27 Hd. 9 rows, large, free from 2, oblique bilobed  
 & rather small. White with 5 rows of brown bands a central  
 like continuous white body line. They are a light ringlets  
 and light brown in center of each. Body slender but  
 uniform, a little flattened ventrally, abd. feet a 9, 10, 13.  
 Pale greenish yellow with dark brown lines about as wide  
 as the intervening spaces. These are single narrow broken d;  
 double sd, lat. substy. s-v and pedal line. The pair  
 are approximate, filled in between with yellowish brown or  
 may be called single line pale centers. The apical is only  
 obscurely geminate. Tubercles & setae black, the former minute.  
 Abd. feet pale, brown spotted, the anal pair black. This reddish

Feb 1 Hd 1.1 large for body, round, full, seems bilobed.  
 white with geminate brown, pale brown filled brown as  
 before, the central white space is rather the widest.

Feb 9, 10 & 13. Hair as before, also a single rounded  
 ventral brown line, a geminate blackish dot in the  
 sd band in incision 5-6. Single d line nearly obsolete.

Feb 24 Hd 1.5 (body 1.0 diam) round full and very large  
 projecting well above 2 and wider than 11 smooth, not  
 bilobed. Pale yellowish with many brown lines running  
 from mouth to occiput parallel, central 11 each side  
 obscure in pairs, a pale as also median suture somewhat  
 darker; antennae. Body slender feet 9, 10, 13. Pale yellow  
 green mixed with brown. 3 lines & a broad middle one  
 below s-v fold, pale yellowish, 8 lines above it (very geminate  
 dorsal, 3 sd. marked by a dark double into a brown band  
 sd band, double lat and double substy) Substy  
 pale interior in the s-v fold and a yellowish that rest.  
 No geminate even plates. Legs brown haired. Tubercles dot  
 in incision 5-6. Tubercles obsolete. Setae rather long.

Feb 8 Hd 2.2 No change. The antennae are long 2 x  
 length of mouth. Hd like a tetrahedron, 2 undulating up to 11.  
 Hair very fine brown, mostly from mouth. In fine greenish.  
 sd band of 9 hair filled in with olive-green black dotted in  
 incision 5-6; double lat. single substy. single sty;  
 single substy; band of 4 hair found in with brown line  
 sd; dark brown median ventral white 3 below it and s-v  
 alternating reddish & brown - all a pale yellow green, a  
 little whitish & d. space. Subpalp brown spotted. Setae  
 black, black ringed. Setae rather long; tubercles black  
 minute. Feb 12 Hd 2.5 Same. Feb 16 Hd 3.0

another 3.4 Subspherical, large, a little elongate, dark  
 and free from 2, not bilobed, a low, high triangular  
 (See after 845)

*Eois Acanthata* Huston n. sp.

777

Egg from Cooper 15299 Palm Beach Fla. mfg Jan 12-13  
 laid on the cover, flat, sideways or even on end, irregularly  
 elliptical rounded, not sharply flattened, one end distinctly  
 smaller, the other (micropyle) scarcely flattened, not at  
 all truncate. Rets. distinct, strongly raised and thick,  
 uniform rounded, hexagonal, alike all over except  
 just at micropyle where they become small & delicate.  
 and are somewhat coarser over the rest of the large end.  
 Delicate blue-green, not slightly shining. .8 x .6 x .5 mm  
 later after red specks, later white with an irregular green  
 mark on the side and indistinct red specks at large end.

Feb 20 (Banded Tail Bird) Hd. flat before, round a double  
 notch in vertex, the vertex & sides of equal width. White on  
 face rounded around vertex-side with brown blotch.  
 mouth dark; w .3 mm. Body moderately slender, the  
 before segs well drawn out, normal. White with 7 broad  
 black transverse bands as wide as the intervening  
 white spaces. 2-3 white, c-h long, concolorous, 4-10  
 broad black-banded centrally, the bands incised and  
 nearly interrupted by the s-v fold. That of 10 completely so.  
 Edges of bands irregular but not diffuse. Legs all white  
 the abd. with darker bluish. an ft. white. Tubercles  
 small dark, the setae short, stiff with swollen tips. Setae  
 fine annulate as much as 20. Incision part of segs  
 smaller than the central seg. part. Gaster a c-h. in a  
 ii a small, rest normal and subprimaria. iii before space  
 iv bulky part, normal (see plants, chose *Randia aculeata* &  
 eating with the young leaves) (Found one on this plant Jan 21?)

On Feb 21 white part, exap. v. mac, become greenish. Black  
 band pale & black & a darker patch appears ant. sd between i and iii.  
 This in some salmon tinted. Later bands still paler, slaty, a some  
 brown ad dorsal streak appears and some brown streaks sd and s-v  
 shed Feb 26 Hd white with a few black specks, the longer  
 form 2 and four ocelli over after 9.0. rounded, not bilobed.  
 mouth round w .5 Body white, the feet showing faintly feet;  
 feet, union of joints 5-9 ochre yellow. A dorsal fine double  
 blackish line, cut at incision the ends form a h from a  
 series of dorsal  $\Rightarrow$ , the cuts not at the ochreous incision;  
 a series of black sd spots, a small one ant. and two longer  
 ones mid-dorsal, first a seg, the latter joined by a  
 slaty shade into a somewhat dumbbell-shaped patch



Compound & contractile at ends. 6 similar SV rows, but smaller and the ant. spot obsolete; a medio-ventral line, dorsal, under a light & central & segs. The ends 2-4 10-13 are feet appear simply white peppered with black. Late ventral point color is pale green, dorsal light blue.

Stage 2. Hd. 9. Same but more distinct. Hd. round, white with a few black dots. 3 each side of, a curved row of 4 green behind occiput in apex of tube & another suboccipital one on head edge. Body bluish white, d. pale green ventrally, incense 5-10 with bright orange bands. Markings black, fine & slenderly. On numerous (± 25) annulets, dorsal large, 5d spot, 2 post. point & ventral of 1st seg. as before. Tubercles and setae black, obscure, the latter rudimentary. 18 stylus. Slight orange blotches in the numerous but mostly pale segs. region. Ends 2-4, 10-13 with double & single lat. streaks.

Stage 3. Hd. 10. Hd. 1.4. No essential change; darker, orange markings more extensive. Hd. rounded, black & a black spot. Head erect, pale green; colored as before. Body pale greenish white in ground but the markings greenish brown. Red streaks continue cylindrical segs along 25-annulets all the markings cut into patches of the annulets. Double d. line and bands, now obscure double SV, broken into the loops and spots of previous stage but less distinct, more connected. Change in extended incision and more or less d. & lat. 1 even ventrally in spots between the black marks. Cth & plate without any. Cth green with 8 long, black dots. Ant. plate & legs more finely spotted. Tubercles small, with spiracles black. Setae obsolete.

One found in ground Feb 18. (Found one in Pandia Feb 17)

cale. .29 .48 .79 1.32 2.2 7st.60  
 (Found Feb 18 1900 Cat. no. 15644 ♀ ad. ♂ not in web.  
*Pezomachus glaucocephalus* Hübner 1870  
 778 (Keyed list)

Phycids? on thorny 2-primate *Suaeda* *bondurcella*  
 Palmer Beach Jan 1900. ad. ♂. They eat leaf bark or partly mine in leaf stem but live in a webbed or mass of brown leaves which contains a close knit web strong oblique tube without much space. Leaves united by a fine loose web. Make an irregular blotch in bark, cutting bark or anything.

Hds 1.4, 2.2, .3, .5, .7  
 Hd 2.2 rounded, not tilted, upper edge below & paraclypeal piece to tubercle; dull white heavily mottled with brown spots in groups. Body dull leaf brown, dorsum rather broadly pale brown with a diffuse greenish red brown stripe. Rest of body pale wood brown mottled with brown spots; a broad heavy black sd band enclosing it in its upper edge; a lat & super sty (iii) dark brown lines the lat. not fully distinct from the sd one. Feet short, caught in a ring. Tubercles small, black; i-ii in line, iv & v approximate but quite separate, v before & dorsal to iv. Thorax id. i, ii, iii, iv, v approximate in pair. Spiracles black ringed. Setae long brown, 8th dorsal transverse, uniserial the segs. ocellus 3-annulets on ant. annulets suber and not reaching dorsum. The feet brown. Cth and ant. plate both large and broad but marked exactly like the body, the anal plate being entire. Brown fine peppered darker as the bands are obsolete in 12. (Inflated g.v.)

Hd. 3 brownish, eye black. Body whitish with 7 fine brown lines on each side alike & even spaced the SV parallel. Shields ancolous 500 700 w. greenish  
 Hd. 1.3 20 brown line broad, subventral, ad-d, 6-d, lat. ant. stylus (iii) substylus, 25-v subventral, not defined, sd line blacker than others.



Early mine a slender irregularly linear sinuate mine under upper epidermis, gradually widening to end where larva emerges to begin blotch elsewhere. Head contained as a long dotted central line.

779 *Spomosea* sp

Leaf miners in ordinary morning glory. Palm Beach Fla Jan 12 1900. After several in a leaf. a slight spin web on back of leaf. Feeds as true miners but gets all the grass by a hole 3d collects in masses in the web. Result from a new mine. Mine takes all parenchyma

between epidermis. Larva passes above veins. a large blotch nearly symmetrical sometimes more a less lobed. Hd broad, flat,  $\frac{1}{2}$  under 2, shining greenish with a brown tint; mouth brown. w.  $\pm 3$  mm. C-ht quadrate, rugose, shiny greenish. Body slender, segs moniliform, 12 smaller, sharply moniliform 13 small and slender. The feet large, pale, abd. very small, slender, close together, anastom. on 7, 8, 9 and 10, a large pair on 13. Setae 1 moderate, 4 minute post, iii small, iv large partly a little post; a tiny seta (v?) just above vi; vi large, somewhat ant. vii small on base of leg; viii under.

Crochets form a circle. Feet 7 are remote & short, 8 closely approximate, 9 less so, about middle of leg upant, 10 still more separate but nearer together than 7. On thorax iii & v are present. Translucent whitish green, food dark green. anal plate shield-like, rugose, blackish on the lat. edges. D. vessel with whitish edges.

One out out in remote web Jan 15. pale green a d, head permeate lat and faint 5-v dark red lines. Many pupate there.

Pupa like larva. a point before, coarsenough tail

Oct Jan 21 1900 Cat. Nos 15320-3

Jan 20 1901 1.5 pale brownish, reticulate with dark brown a curved line from 11 to 12 & 13, 2 dots on 12. Mouth brown and long, scell black. Body thin & slender, a little flat tubercles more or less shaded with slaty, feet colorless also on 12 & 13 plate feet colorless. Spinacles yellowish, blackish in white. Body thin, green 780 not shiny; tubercles shiny, 8 setae each long pale. m. Kinget Spum 1.5

mine on *Forestiera foetida* Poir Palm Beach Fla Jan 11 1900. Slightly webbing the leaves together with fine web. Eat parenchyma in whole large whole leaf. Hide in withered leaves

Hd broad, outstretched flat lobes rounded, face  $\Delta$  piece to vertex; colorless brown shades on lobes; mouth brown, eye black; w. .8 mm. C-ht large colorless. Segs slightly moniliform, thorax narrower than abd, 5 abruptly wider, 12-13 tapering a little, last leaf of 13 smaller. Anal feet outstretched, divergent, other small slender, whitish & transparent with a green tint; 12 & 13 set brown reticulate faintly to match head a small black dot set on 3 & 4. Dorsal vessel green white edged. Setae long and fine, pale; tubercles obsolete. 3 on front side of tubercle ii b.

No. tubercles very large but perfect brown transparent in line, iv + v. normal. (approx. 4 mm long, 1 mm wide, 9 x 4 mm, 3 mm wide)

Hd. 6 all green tiny brown dots.

Hd 1.0 dull luteous a curved dull brown stripe from ant. to vertex  $\Delta \frac{1}{2}$  hd outstretched ant. long; apex under 2. Body brownish shiny solid greenish i-iii large smoky slate, other concolorous. Shields D with dark tubercles. Anal fl. concolorous obscure. Anal feet outstretched. Setae long pale

ii b of 3 dark but one contrasting black speckles

Hd 2 all greenish, segs moniliform a little, hd faint brownish

(\*thems hinged at ends and incisures) Earliest larva mine in the leaf with hole for pupa. Mine thin, wide throughout, not over 2 x larva



Hd 2.5 (Shhd 1.65). Hd 2.7 Hd 2.3 (Shhd 1.6)

(This larva was shiny reddish to spin.)

a faint broken sd line above; whitish 3-12. Coln should be trans. greenish from food.

781

Opalids on *Capparis cynophallophora* (uninj.)  
Palmer Beach, Fla Jan 10 1900. Sewing together the leaves & resting therein, never in a dried leaf. Scanned any web outside that for sewing.

Hd 2.3 Round, apex below, a high slender csh in ordinary position of retraction. Antennae as long as mandibles. Whitish with remote scattered dashes of pinkish dark brown principally in a double line each side of dorsal notch and also parallel across center of lobe oblique. Csh large, membranous and transparent on the retracted line in placing with through it. anal plate concolorous with body. Body a little flattened; seg incisions marked. Segs 3 annulate and annuli small not reaching beyond. Spin transparent not strongly marked, shiny. Dorsal

seal honey brown on rest of spec. and whitish carmine; w ii w iii a double row of broken brown line iii being a large crescent brown tubercle, all the rest weak. A broken white sb line. Rest of body whitish carmine. Feet colorless, normal

Length Hd 2.3 (to th) do but a broken yellowish white sd line above; like one stylized one. Edge of csh tubercles surrounded by blackish.

Hd 1.7 Hd dark the spots obscure. Body purplish d. with dusky yellow sd line 3-12, double lat black line and broken pale yellow sb; s-v whitish. Setae long white. Tubercles, except iii, minute.

Hd .6 whitish with streaks of brown dots in lobes converging to d, round brown. Body flattened, green from food a double broken lat black band from spotted csh to colorless spreading anal feet. Feet pale.

Hd 1.4 (variety?) Pale red & orange marked. Csh transparent faint spotted. Sd & lat (between ii & iii) and sb line distinct, whitish 3-13. A dorsal reddish, spec

781A

Reddish to spin. Same. Hd only 1.7. Spin between leaves using grass. Would not spin against grass like 781

781 A One Feb 22 Cut 15664

between sd-lat, lat-sb filled in with black brownish mottlings on s-v food. s-v colorless notches in an ellipse. Ring a little flattened. Setae long, pale. Another Hd 1.7

Hd 1.2 whitish, heavily black spotted except over d. Csh transparent, black dotted at tubercles and edge. Body flat, green from food dorsally; white broken sd line 3-13 and double black lat line crossing ii and iii. Feet colorless. Setae long, white.

Hd 1.6 (both) just like above but more green, only faint purplish in dorsal space.

Hd 1.1 DO

Hd .4 Flat body, a high mouth point; luteous, rather black. Body a little flattened transparent yellowish a geminate lat brown stripe. Csh large, colorless. brown dots on tubercles & on lat edge - anal pl small, not marked. Tubercle small brown; setae long stiff pale. Do not see any outgrowths on thorax or abd. Skin of thorax geminate, segs scarcely annulate.

Calc. 45 70 1.1 1.7 (2.2) 2.7  $r \frac{64}{100} (\frac{80}{100})$

Another Hd 3.0 like 2.3 Body transparent greenish; white broken sd & sb line; slight whitish streaks in lat space, the black lat line absent only represented by the large dark brown ii+iii and iii (abd). Slight whitish mottling s-v. Thoracic white camouflaging. Shield transparent slightly brown dotted. Plate concolorous.

Hd .55 Hd .8 like 1.2

One Feb 10 1900. Cal. W. 15496  
*Dichogama redtenbacheri*



782

Pyralids on Mulberry (*Morus rubra*). Under a web a back of leaf next midrib or folding together a portion near edge with web.

Hd. 9 rounded whitish green ocelli black. mouth brown. Body slender, uniform; segs moniliform, somewhat 2-annulate densely shiny transparent, green from food. Tracheal line white, no marks. Feet slender, normal. Tubercles rather large, profusely colored, obscure, normal IV+V. Setae long fine, pale. A black dot before ii b on 3.

Another do to 16. Black dot before ii b on 3, a small one on 4 and another behind iii on 12.

Hd 1.2 Same transparent green from blood and food.

Hd 1.7 Same. Segs not moniliform, setae short. moderate, all perfectly transparent blood pale green, no pale. Tubercles large colored. Jan 22 - dorsum all reddish to J. Hd with faint red reticulations.

Club Feb 10 1900 Cat no 15495

cover a mass of silken heavy web on top of leaf like adrian tent but much larger with a small web centrally forming an imperfect tube <sup>with ribbon of fine silk</sup> all the top. Some ~~web in web~~ <sup>web</sup> on the other or even absent. Pupae pale green without marks. 783 Can wriggle up, near tube.

aurora & **C. pro Burck Nov 12**  
Onian on *Ficus pedunculata* Palm Beach Fla

Jan 14 1900 When small on back of leaf under a delicate silk tent; when large on upper side under a similar trunk web spun flat on leaf across the slightly concave upper side. Dark patches in center of leaf under web which remain on old leaves characteristic though web disappears soon.

Hd 6 (a back of leaf) whitish green ocelli black mouth brown. Body slender, green from food. anal feet extended.

Hd 8 (on top) all green, same as next.

Hd 1.1 Rounded bilobed,  $\Delta$  over  $\frac{1}{2}$  to water; mouth properly, a long dark spinneret; antennae short but palpi distinct; lobes 1 & 2 bulging, labrum distinctly emarginate. Green, ocelli black, labrum brown edged, setae black. Body a little flattened tapering a little at ant end and more so post, anal feet divergent, projecting other abd. short; the feet large, bent at rt & lt centrally like claws. Segs 3-annulate, ant annulets very small. Tubercles small, concolorous a little elevated, i-ii in line, IV+V. On thorax ia-ib, ii a+ii b, iv+v normal. Setae distinct, moderate, pale, but black on the concolorous and visible etc. & anal pl. Green clear, uniform dorsal darker, feet whitish green. Horizontally. Spins web with great rapidity. Solitary. webbed.

Club Jan 26 1900 Cat no. 15343

*Simulium dyariella* Burck



784

M. King

Very similar to 780 but on *Prionia aculeata* L.  
 Palm Beach Fla Jan 14 1900. Hd 1.0 whitest  
 reticulate with brown dot in patches, each  
 side outer. on lobe centrally & behind eye.  
 ocelli black, mouth brown. Body slender  
 translucent green from food; cph large  
 clear, slightly black spotted & marked on  
 edge. Patches tubercles dusky. Tubercles  
 moderate colonies, iv+v. On thor. i, ii and  
 iv+v with black dot, ii largest; on 4 ii & only  
 an accent. iii white length with small  
 dot and on 12 ii also. Skin shiny, tracheal  
 line white. Setae white, rather long.

Egg on leaf: stem toward end of branch. The side  
 egg laid on dark & opaque. Elliptical, flattened, dorsal  
 slightly shiny, slightly translucent. Ret. distinct, linear  
 irregularly pentagonal. Shell iridescent. 1.0 x .8 x .2  
 Jan 22, Hd 1.6 Hd round full, ant. long as before, the  
 brown dots sparse & faint. Body a light flat  
 cph is visible not colored except a blackish  
 translucent line at edge. Body shiny, pale  
 green, translucent. feet dark green. Tubercles  
 colonies, a black half ring below ii on 3 and  
 a faint one below iii on 12. No marks, tracheal  
 line white. Anal fl. invisible. Setae short, white.  
 Curled J shape in a slight web between leaves.

Hd .25 colonies; body faint green brown incised line on  
 ant. edge cph and black speckles on side of 2.  
 also on *Bougainvillea*; rather injurious

Oct March 15 1900 Cx no 15780

Geoms XI III  
 17

785

[cf also BB Key West, Fla]

Larva eggs laid on webs on *Prionia aculeata*  
 (Same as BB found before at Rubber tree)

Elliptical, a little flattened above & below,  
 one end larger than the other, but all full  
 and well rounded. Micropyles (large) and  
 not flattened. Smooth, faintly shiny, and  
 the reticulate obsolete, just the faintest  
 trace perceptible to the shell. Not shiny,  
 color yellow. .6 x .55 x .5 mm.

Hatched Jan 16 and ran to young growing about to fruit stem  
 Hd .4 round bilobed, moderate, rather flat before, very  
 pale brown, a narrow dark line on just edge of  
 cheeks; ocelli & mouth dark, not shiny. Body  
 not very slender, cylindrical, smooth, normal; dull  
 greenish sordid. Dark and opaque, and definite line  
 but numerous long thin dark lines fine streaks  
 somewhat confused. Feet pale. Tubercles small, brown,  
 setae black with slightly smaller tips. No outgrowths.  
 iii surprisingly ant., iv just a little above whitish tracheal  
 line, v well ant. vi with separate hairs. On thor. ia  
 ii a, iv and vi visible.

Shed Jan 20 Hd .7 rounded, flattened before, head and feet  
 mouth protruding, ant. distinct, dusky brown speckled  
 with darker, a grayish faint v-shape bordering chypers.  
 Body not very slender, legs seg. elongated, green, the  
 ends 2-5 and 10-13 shaded with brown, dark ant. shaded  
 esp. 5 & 10 post lighter. Faint longitudinal line but  
 no distinct lines. Feet pale. Tubercles & setae obsolete. No  
 labial fin, short, pale. Shields concolorous & obscure.

Shed Jan 23 Hd 1.2 Round, flattened before, not bilobed  
 and feet from 2. Whitest densely mottled with pale  
 brown, more sparse about chypers. Ocelli black.  
 Body moderate, cylindrical, uniform, translucent  
 whitish green from food with irregular longitudinal  
 rows of small white speckles. At the tubercles  
 faintly tinged with brown and the speckles become  
 dark. Feet pale, brown speckled. Tracheal line



visible. Spinules narrowly black rimmed. Tubercles small, white; setae very short, pale. Shed Jan 27 Hd 2.0 mm round, very slightly bilobed whitish-green thickly mottled with spots of dull olive green; antennae rather long, last joint salmon color. Body cylindrical, normal anal plate large, slightly pointed, no cth, all concolorous. Green, mottled with irregular longitudinal lines and spots of more opaque yellowish green and a few brown dots and specks. Tubercles white, small. Spinules white, narrowly black rimmed. A group of dorsal black specks between ii & a dorsal line 4-12, broadest at 9 & 10; black spots on s-v fold post, broadest at 9 & 10. Feet green, brown speckled. Setae short, pale. Beneath as above, all uniformly colored without distinct lines. Next day turns all dark brown. Ind. call like bark, mottled with greenish brown & crisscross black lines (partly den. of King West Linn, BB). Tubercles white, the black patches showing as darker shades. we mellowed Feb 3

Shed Feb 14 1900 Cat. no. 15563

*Gysseobrya hirsutata*

Spun a firm white cocoon between leaves or folded leaf  
Shed Feb 11 1900. Cat no 15509

786

Leaf miners in morning glory, somewhat similar to 779<sup>1</sup> but with different habits. Main irregular a series of blotches and lobes, usually elongate and several partly joined; taking all parenchyma below epidermis, the skin often present by web as that surface is wrinkly. Mass partly ejected. Head to leaf by close web. A series of irregular wavy tunnels.

Hd 6, flat, much pigmented, eye black, mouth brown [max] whitish; body opaque whitish a broad dorsal & lat. dark red band 2-13 and a faint narrow one on s-v fold in center of body. Antennae same. One shed in mine like this. Cth ~~same~~ similar to d red stripe staining it, post. Lat stripe with minute pale dots. Setae moderate, pale.

rd. 4 flattened rounded quadrate, Δ rounded above apex to 2 as hd is retracted. Greenish, brown on margin, eye black, jaws brown. Body flattened, s-v fold prominent at feet 5-10 short, rather broad, all alike and equally prominently spaced, the crotchets rather numerous in an ellipse; anal feet approximate, crotchets in a line. The feet small, curved. Segs 2-annulate, seg incisures marked, both above and beneath a narrow less opaque than body. A narrow longitudinal lat. transparent crease interrupted by incisures. Venter 3-annulate. S-V fold double 5-11, rest cinn. of the annulets. 12-13 tapering. Cth large, flattened D. has lat concolorous, anal plate as large as segment but actually small. Translucent whitish like ground glass; al. canal green. Stigmata in 9 large annulets showing 4 segments. Series of setae before leg (viii), tubercle with very minute rudimentary seta near center of lower s-v fold (vi); 2 setae, tubercle close together on base on ant. part of upper s-v fold a little before apophysis (iv+v) the anal one (x) very small, rudimentary; spiracle rud.; iii above & before it; i and ii nearly obsolete, showing as slight scars. iv is the only distinct hair. iii and v absent in thence. Skin finely reticula shagreened



787

1900

Cautethia protea(?) on Ciliococca racemosa

Palm Beach, Fla. Jan 17 1900. Hd rounded, 1/2 to middle of front. Pale ochraceous greenish mouth darker; not shiny; W. 5 mm. Body cyl. feet normal, 12 segments with a long (1.5 mm) erect horn bearing a vesicle and fine setae. Segs finely weakly 8-annulate, shiny, punctate with pale dot. Translucent yellowish, green from food. Horn brown black stained with red around the base. i on 3<sup>d</sup>, ii on 6 annulet, iii on 4th, iv a little past (4th) subseg. v very ant<sup>(100)</sup> and before then iv; 2 setae on seg shield. Setae fine, stiff, straight, not swollen, i-iii dark brown iv-v pale. Shields & plates concave, unconfused. Gaster funnel shaped. Setae white, with on distal green mark on the side and indicated red at end of large end.

Shed Jan 20 Hd 8 rounded, soft green not shiny, still black. Body same soft green covered with fine 8 pale granules, staining 8-annulate. A faint pale sd line. Horn long, brown black, setae stained with red around base, which runs a little up the line. Body pale. Feet pale, toes reddish at tips.

[Egg. Slightly elliptical, well rounded, not flattened, resting on leaf and granular. Shiny bright green. Minutely shapeless but also with obscure linear rather small reticulations. 1.2 x 1.1 x .9 mm. Solitary on back.]

Shed Jan 24 Hd 1.2 mm Squarish, rounded, 1/2 horn not to middle of front. Soft green with 2<sup>d</sup> whitish granules. Body cylindrical, segs 8-annulate, uniform; annul feet large with 5 plates pointed behind. Horn long, luteous, reddish at base and tip, setae with a large apical setae. Body dorsal pale granular without lines, light green. Spinacles concave.

[Box a large one Jan 25 Hd about 2.5 (inflated)]

Shed Jan 30 Hd 1.7 Same. Horn green, reddish at tip and with a brown streak above at base. with sparse black dots on apical setae still

distinguishable. Light green, pale granular, minutely pilose. Spinacles 4 black. On rest pale brown. Feet green. No lines, no shields. Horn 4 mm. long. Segments uniform, all of equal thickness; 8<sup>th</sup> fold rather distinct. 8-annulate. (Put it out)



788

Miner on M. King's planted vine Solanum  
jasminifolium Palm Beach Fla. Jan 17 1900  
Seeds together the leaves folding up towards upper side  
and uniting by stitches. Hair all out, no web.  
Hd 1.2 Venter under 2, subulate, translucent green  
tinged with brown shiny. C-sh transparent with  
a black fleck on either side before edge.  
Body somewhat robust, limbs up, rounded off  
a little at ends, not tapering. Segs obscurely  
annulate. Translucent, but apical whitish  
green beneath w/ dorsal vessel dark blackish  
green. Tubercles rather large, elevated but quite  
transparent, ~~a long black~~ ~~just at~~ ~~the~~ ~~base~~ ~~of~~ ~~the~~ ~~stems~~. Spiracles  
all colorless ~~except 12 which is black~~ ~~iv + v~~.  
Feet colorless, tips of toes dark. Setae short, pale.  
Hd .6 Do in mark but black C-sh dots.

Cocoon in leaves of white oak, slight but strong  
Hd .8 Do. Hd pale carmine. Green, black C-sh dots.

Found on Solanum radula Vahl Jan 23 1900.

Also on Capricorn frutescens

Found Feb 4 1900 Cal. no. 15372

788A On Capricorn. Tubercles more or less visible  
esp. iii; black spot behind ocelli. Ocelli same.  
Hd 1.1 Venter slightly under 2, deeper light than space to vertex. Green, colorless rest.  
on apex of lobes much brown, ocelli & spot behind feet dark & lobes black. C-sh dots, 2x  
dark shade do, color do, tubercles, esp. iii shaded with black excepting tubercles very small  
a long fine wavy white line in a narrow loop reaching forward from 10 to 8 each  
side. Tubercles slightly elevated iv + v, 10-11, 11+12. Segs shiny, obscurely 2-annulate

789

Leaf-miner blotch upper surface young leaves of  
Nectandra willdenowiana Nees Palm Beach  
Fla Jan 17 1900. Very flat & tapering with shallow  
all down the back (Sent to Busck) Mine Feb 12

790

Miner living together leaves of Engenia sp  
Palm Beach Fla. Jan 17, 1900. Leaves marked  
by wobbly sick and lance shaped eaten.  
Hd 1.2 Round apex slightly below 1, shiny carmine  
yellowish around dark ocelli black; antenna rather  
long. Body rather dark ends rounded, not tapering.  
Segs obscurely 2 annulate incisions faded. Tubercles  
large elevated colorless, iv + v in one tubercle  
small. Translucent, shiny ~~yellowish~~ ~~in~~ ~~the~~  
not shiny. Feet green, slightly obscure by its  
opacity of stem. Tubercles short. Setae moderate  
pale; feet normal. No marks whatever  
Hd .6 Do 2x 2x. Somewhat olivaceous green, not  
shiny Hd whitish

Antennae 1.2 Hd pale brownish, body all dark red  
except 6 rings about tubercles - to J?

Hd .8 Do

Spin silken tube between leaves

Out Feb 9 1900 Cal nos. 15478-80

Subo (not one)  
Jan 30 1900

791

DIPTEROUS

Leaf-miner in Charitonia for plant Passiflora  
gallida L. Palm Beach Fla Jan 18 1900. Linear  
winding mine on upper surface gradually  
widening to end where larva hatched. (to Busck)

Subo one Feb 12, 1900

792

DIPTEROUS

5x before  
828

Leaf-miner in Erithalis frutescens (L.) Palm Beach  
Jan 18 1900. Towards the ocean. Linear winding  
mine on upper surface like 791 but more  
thickening & crossing compared to a smaller part  
of the leaf. often with short branches (to Busck)



793

*Eugenia buxifolia*

Leaf miners on *Eugenia* sp (different from 790)  
 A narrow slight wavy uniform (not wavy)  
 mine about 5 mm wide starts in leaf and  
 runs all about the margin often nearly  
 around on under side, the epidermis & which  
 but leaf unchanged, at end processes to under  
 of leaf where expands a large bladder like  
 hollow that finally takes most of leaf the  
 2 surfaces beneath a little, pale like, green-  
 lent, pale yellow or red. It divides the midrib  
 which entirely separates half a each side of the  
 flat bladder. Finally fine accumulates in this.  
 Larva Hd rounded, not flat, apex under 2, 3 nearly  
 6 vertex unusually narrow. Whitish mouth broadly  
 stained with brown. Antenna short. 2 large black, scaly  
 setae distinct, white; w. 3 mm. Body somewhat  
 flat. Though the dorsum is rather well rounded  
 ed. Entirely opaque white without markings.  
 Segs moniliform from st. view, a little irregularly  
 chanced, not annulate. Joint 2 large, the large  
 shield concolorous; 15 small with moderate  
 shield, faintly brownish tinted. The feet mod-  
 erate, the ant. directed obliquely forward, others  
 lateral, 3-jointed, normal. Abd 7-9 & 13 short &  
 dark without crochets. No feet on 10. Setae  
 white, some rather long, from very small  
 tubercles. IV is a large seta but (3 spots on)  
 the others are indistinguishable (with 1 brown at base)  
 with 1/2 in. lens. There is another long seta below it?  
 (can't make out setae to satisfaction) (dark (Bursch))

794



Stage I

Body translucent, not clear, tubercles slaty, brown  
 black with small clear tips with bulbs.



On head still another seta on cheek  
 very down behind antenna (x?)  
 Larvae of *Heliconia charitona* on  
 growing end of *Passiflora pallida*  
 Palm Beach Fla Jan 19 1900.

(To be raised to be sure of species)  
 OK. Orange at first, but turns quite white by end of II

*Synchlora livida* var. *lividaria* Dyar  
 cat no 15499  
 Spun Jan 21; out Feb 10 [795]  
 All green flanged larva with adhering objects  
 on flange back of *Gentiana canna* 2 Palm  
 Beach Fla, Jan 19 1900. Green with dense 2  
 pointed white granules. Angulus 5-v perfect  
 5-9 bearing it and 1. is large, a long cone  
 with many little adhering spines for the stuff  
 1-III small, v larger, VI-VII small. And iv 6  
 are so enlarged, this tubercle with angulus  
 1-III On 5 is iii that is the lip spinning tubercle  
 14 small among down at base of flange. Spines  
 5 below & below flange 6-9 a upper aspect. A faint  
 double white d. line & sharper post. a flange



796

Egg on *Eugenia* sp [790 plant] Slightly on back of leaf. Low domed, base flat, circular from top view,  $\frac{1}{2}$  as high from side. Reticular distinct, fine linear irregularly hexagonal, a little elongate vertically and seeming to be slightly arranged in vertical line; a slight prolescence at vertical microphyle. No ribs but faintly indicated vertical grooving, a suggestion rather than any actual structure seen in some light; translucent green. D. 1.2 H. 3 mm.  
[Egg on M.I.] See 841

797

A winding, gradually widening mine on upper surface, finally a great black covering the same parts that the mine had previously traversed. The upper epidermis detached. Bladder like, thin & finally the lower part of the lower side rather extensively. Head rounded, the lobes full, a high to high shiny brown with green under dark eye black mouth brown like any exposed pale. Body nearly cylindrical, not flat. Segs not sharply unilobiform, 2 a little larger than head, 3 larger but all nearly equal. 12 rather truncate post, 13 narrow, rectangular. Translucent whitish, feet green, d. small dark. Skin fine granular. The feet short, distinct on 2-9. Feet 7-9 short with 5-7 crotchets in first side, 10 rudimentary with no crotchets. 13 crotchets with rows crotchets in ant. side. *Blotch* *leaf* *miners* on upper side of *Pithecolobium* *chapman*

guadalupense, Palm Beach Fla. Jan 19 1900.  
(Sent to Busck) Blotch may cover whole leaf.

798

*Micro* on *Euphorbia* <sup>*heterophylla* L</sup> *agathophylla* Jan 19 1900  
Scum up young leaf upper side in and fast with white silky web at edges. Leaf gets much distorted and folded between veins by it growth when tied. Same club of the terminal end keeping it closed with silk.  
Hd 1 ± rather elongate, pale brown, shiny. Two black spots on ocelli and a brown line just on lower l. of cheeks; mouth brown; fine dark line on labium. Body moderate, tapering a little at ends, not elongate; colorless transparent. The blood faintly green, feet dark green with concolorous; anal ft. faintly brown. Thor. feet black except at base, anal short, not colored. Tubercles faintly brownish, rather small, the central hair tubercle black. IV & V, III on 12 almost before the spiracle. Segs very obscurely 3-annulate. Skin minutely spinulose.  
Out Feb 13 1900 Cat. no 15550

Tubercles small, a little elevated, round; ii much closer to the setae underneath; iii ant. with long setae above & a little behind spiracle; iv & v on upper s.v. fold, very remote, iv with short setae, v with long setae and obscure; vi with long setae on lower s.v. fold; vii 5 tubercles on outer side of leg with short setae all are distinct except v which seems really absent though a little just at the skin is low with iv but ant. may be it. Finally turn all pink red, came out & spun neat cocoon



799

Micro. on code for plant Myrsine floridana A. Delb.  
 Spinning leaves together, punting, resting in dead leaf.  
 Solitary. Working pupa found in spun up leaf.

Hd 1.0 ± pale creamed brown, shiny, a black dot  
 on eye before and trunk streak past on lower 1/2 of  
 cheek. Mouth whitish. Body translucent,  
 faintly ochraceous. Shields shiny brownish  
 like head. Feet dark but not conspicuous  
 as the body is sub-opaque. D. vessel brownish.  
 Tubercles small, colorless. Setae long pale.  
 iv + v. Feet rather short, normal. Tracheal  
 line white. No marks.

Found tonight red and spun in leaf, cutting a  
 section of margin & folding it over. Jan 26.

Silviculture with Feb 11) possibly = 834?

800

Chick Feb 1 1900. Cat. no. 15365. Thorax of mouth above pure  
 white like center of fore wings. (Injured in mountains)  
 (See after 741 for fuller desc. (= Mastichodendron Jacq.)  
 Leaf miners on Sideroxylon pallidum L. Palm Beach  
 Fla Jan 21 1900. Usually on under surface, rarely  
 on upper and a linear, gradually widening wavy  
 mine about after covered & recurved. Looking so as  
 to resemble a blotch white. (Sent to Brooks)

801

Micro on Psychotria undata Palm Beach Jan 22.  
 cut off at middle and fasten to petiole by  
 silk, rest a small opening leaf, at end of  
 branch Hd: 8 Larva sitting on back of petiole  
 under folds over part of leaf. Hd round,  
 ochraceous tinged, smooth. Venter under 2. Body  
 green, thorax shaded brown. a dull brown blotch  
 on stripe 11-13 underling behind. Another much  
 larger but hd. the same had eaten bud and  
 mined some distance in the end of the stem.  
 Body robust, large for head, thick centrally  
 and tapering towards ends. Ant. and 2-5  
 heavily shaded with brown. Post. d. stripe  
 distinct and edged with brown. (A mark on  
 venter, hd round, not bilobed, mouth wide  
 brown shade 2-5. femora past with gamble  
 d. 1 lat continuation. Tubercles large, green  
 translucent, the actual hair tubercles brown.  
 iv + v, i + ii not quite in line; on thor. i + ii,  
 ii + ii +, iv + v normal. Sps folded posteriorly,  
 obscurely 2 annulate. Feet normal, slender.  
 Setae rather long, brown, esp. long at ends.  
 Shields weakly colorized, greenish like tubercles.  
 Spun webby cocoon between leaf and cover.  
 Minors may extend whole length of dorsum. No lat white  
 stripe. (Chick Feb 7) 1900 Cat. no. 15443

802

Linear underling mine ending in a curled up  
 patch on upper side of "wild coffee" Psychotria  
undata Jacq. Begins very fine, gets to 3 mm  
 wide. Palm Beach Fla Jan 22 1900 (sent to Busck)  
 Larva (See on page with 744) Cat. no. 15358



Leaf rollers on nettle *Boehmeria cylindrica*  
 Willd., Palm Beach Fla Jan 22 1900  
 Roll up leaf wrapping it around back side in  
 and tying with bands of silk.  
 Hd square below, mouth projecting, slightly  
 lobed, apex under c. Slight tan para-d piece  
 reaching vertex. Pale green, jaw black, visible  
 through the transparent labium; lobes mottled  
 with brown; para-d piece smoke black; a  
 heavy black-brown band on lower c of cheeks  
 from jaws to back of head; mottling above on vertex  
 of lower part; w. 1.8 mm Body translucent  
 whitish green, tracheae white distinct,  
 dorsal vessel dark green. Cox large, transparent  
 but with a broad black lat. margin that  
 reaches round posteriorly opposite tubercle 1 of 3.  
 Tubercles moderate, transparent, those of 3  
 faintly dusky marked. Hair tubercle itself  
 hyaline; setae pale rather long. Anal plate  
 invisible, transparent. Feet pale  
 brownish. Spinacles whitish.  
 Body moderately robust, not  
 tapering.



Ant Jan 30 1900 Cat no 15351

brn. yellow finely cam  
 colored and last stage  
 of 2 forms, dark yellow  
 & chocolate brown.

Spun Mar 7 (Ant Mar 26) (805 cont)

Other came out different colors. Bright yellow, mouse  
 gray, chocolate brown, orange red; the color always  
 residing in the distal 1/2 of the hairs in the spinules  
 part all heads and bodies alike in color all  
 pencils white. Later dark yellow & chocolate

Psychid? case on *Fortiera formosa* Palm  
 Beach Fla, Jan 22 1900. (See specimen)

805 (cont)

was working on the head. A slight, ~~dark~~ <sup>black</sup> crest  
 tuft upper side 15 as long as other hairs. Hair  
 longest most reddish centrally, the end and 3 or 4 on  
 without black tips. But all pale. Hair rather long  
 tubular, the tips formed by 3 or 4 black barbs in a  
 terminal group. Shape tubular concolorous with hair  
 looks like a brown hairy gill in back of leaf.  
 Head Feb 15 Hd 2.5 rounded, scarcely lobed, pale  
 whitish a large, thick U-shaped, black bordering  
 the d and showing out a short spine at right <sup>below</sup>.  
 apex; antennae rather long, with small <sup>white</sup> ~~pale~~ <sup>white</sup>  
 body flattened ventrally, rounded, thickest at 5-  
 and a little depressed at the ends, entire covered  
 by the dense hair. Pale yellowish, occasional brown  
 tricus, warts concolorous, no anals whatever.  
 Hair a dense brush all over regular, pale  
 yellow, spinulose, the ends slightly brown tipped.  
 On sd want 1 of 3 or a long slender white pencil  
 of 2 or 3 hairs, rather densely feathered spinulose.  
 Vents i-vi all large and rather contiguous, rounded  
 hemispherical, the single setae of 3 or a little  
 elongate transversely. No trace of tuft on 5. Long  
 white hair loose and have soon lost them and  
 are all yellowish, stiff, and even & dense.  
 (one interpolated Hd 2.2, U-shaped brown, not black;  
 hair yellow, white hair slight + a faint brownish of  
 feathered tuft on 5) showing dark yellow 1/2 and 1 stage  
 Head Feb 25 Hd 3.4 ± pale yellow, a diffuse red shade over  
 the face of each lobe, para-d piece gray & some gray dots on  
 yellow, epistoma and antennae white, ocelli brown, gna  
 black at tip. Body as before thin, covered with a long  
 yellowish hair even spinulose, the ends pointed not tufted  
 slight slender white pencils and from sd want 1 of 3 or  
 2 or 3 and pale yellow like hair without warts. Hair all dark  
 orange red



Calc 45 .65 .93 1.33 1.9 2.7 3.85  $\frac{2}{10}$   
Cant no. 15810 *Empendroma floridum* <sup>(2.16)</sup> <sup>( $\frac{2}{10}$ )</sup> <sup>805</sup>

Eggs on back of leaf of *Eugenia* sp (has 793 galls mid)  
Not noticed? eggs laid in a mass not touching  
and a few scattering. Slightly over hemispherical  
base flat, apex very slightly produced suggesting  
the conical shape. Color yellowish green with  
orange light about the apex; other opaque  
whitish green. Retention small, regular,  
rounded hexagonal, slightly raised, smaller  
just around micropyle forming a ring of small  
cells with one central one. Micropyle eccentric, a  
little to one side of the center of egg. H. 5. Diam 1.1 mm  
Hatched Jan 26 ad squarish, rounded, slightly lobed,  
slight furrow across reaching nearly to vertex. Feet pro  
2. Antennae rudimentary. Primary setae short thick  
bent. i, ii rather near vertex, iii small lob, iv close  
to cell, 3 below each of cell (on each side), 2 below  
on approx. middle above antennae. Colorless,  
a yellow patch on each; joint brown, cell black w. 4 feet  
body antithorax with large tubercles and dark  
spinulose white hairs. Setae short, contracted; the  
on caudum distinct. No shields. Tubercles ia+ib+ii  
on 3 and 4\*, ii and iii on 11, 12 & 13 and dark ochraceous.  
all else translucent whitish with faint yellow tint.  
Body base white. Legs colorless. Antithorax, normal  
and feet divergent. On thor. ii small, remote, bent.  
ii large, vi dark. On abd i small dark, iv slightly  
noted small, v large. Setae single; no subprimaries.  
2 small contracted with weak setae. Body a little flat.  
has tubercle, esp. 3 & 4 rather prominent. (ate *Eugenia*)  
\* distinct united into a flattened somewhat fan-shaped unit  
on each side, green from food. Ochrom tubercle. feet to a dull color  
2 become contracted and 3 & 4 abundant inf.  
(shed and same as following). In III some have a little  
black tuft i 5.

Setae in IV and V vary from pale yellow without  
spots to discolored tufts to cinnamon brown with dark  
spotting and distinct dark tufts on 5.

Collected in *Eugenia* 790 Hatched 6 a little flattened, 3-5  
largest, 2 retracted & weak. Hd flat before, rather  
strongly lobed, colorless, round brown. 13 small  
and with moderate spherical warts with rather  
dense stiff white spinulose hairs, those of 3-4  
largest, very few on 2. On shield obsolete. Spinulose  
i 5 v with present, slender, produced. On 3-4 are none  
above stig warts, on each, none, produced. On abd  
i small, ii large, iii small, iv obsolete, v small, v large  
on thor. spinulose produced 5 v fold. No small flat  
but warts on flaps. Feet rather slender. Pale with  
colorless plates. Antennae whitish-thin sides washed  
with pale brown. Setae brown about tubercle ii of  
3-4 and below ii and iii of 5, 6 & 10. On 11-13 there is  
a more distinct long slender hairy downward a  
found from ii, on 2 & 13 changing from brown to dark  
orange red. Skin smooth, not shiny.

Hatched 9 squarish, lobed, a rather high. Setae short  
a brown spot with an apex of pale & white, cells  
black, joint very faint brown. Warts round, produced  
colorless except 3 & 4 which are brown tinged and  
ii 12-13 which are orange. Warts i small, ii still large, iv  
and v small, vi large, produced. Color as before but  
the brown shading covers the dorsum from 2 to 10.

Hatched 10 Hatched 1.3 Rounded slightly lobed, 4  $\frac{1}{2}$  to vertex  
pale testaceous, joint black as tip; cells black 5 in 3  
on below behind antennae. Body about a third like  
*Parasappia*. Pale testaceous brown tinged esp. on dark  
shades oblique ii on 11-13. Warts round, elevated  
colorless. Hair dense stiff. Fluffy with black tips.  
Inched; a black diffuse d patch 5. Hair from i  
and over 4 ii short & black. A slight cinnamon shade on 10  
State of a rusty brown green food staining w. d. 10-12. Setae  
patched diffuse.

Hatched 10 Hatched 2.0 Same, antennae rather long. Body  
the same, round, colorless, not faint brown or brown  
tinged. On food. dorsal warts near obsolete. Warts  
replaced by very dense hair, few long, diffuse, d black  
clump 4-6 and 9-10. Hair <sup>brown</sup> ~~black~~ on 10 and 11  
than black tips, all even w. a few long fine (late 10th)



\* Also there are grass from living apical opening which  
it at once closed with web. chin gland 2 remote large  
papillae, wider apart than prothoracic feet.  
There is a large hole at top gall apical with three

806 Out Apr 29 Cat 15854

Gall makes in old stem of *Randia aculeata*  
Balm Beach, Fla. Jan 22 1900 Galls a thick  
swelling in the hard wood about 2x thickness  
of normal stem. Fusiform with normal back  
and no opening. Within a tube large as larva  
about 2x mm long, moist, no frame and a little  
pulverine filling wood at bottom, wet. Galls open  
in pairs, adjoining. Larva eats a thin place at  
apical end & spins a little web. Old galls  
remain a tree and do not kill the branch.  
Uniform light brown, a little darker at the ends.  
Hd very full and rounded, a bit above middle  
of front, not depressed nor elevated; hd not  
bilobed all the distance level with surface.  
Higher than wide, antennae decidedly ocelli  
small. Dark brown then anterior pale. w. 1.5 ±  
Body cylindrical, nearly uniform segs. somewhat  
faded & creased, S-V fold distinct but not  
prominent. Tubercles common, shiny brown,  
mostly without setae, though there are a few  
near head and S-V. Tubercles small, irregular  
shaped. iv + v, vi present, vii without much  
conspicuous. On dorsal iv + v normal, ia + it  
approximate, ii + iii. Spinulae flesh color with  
dark tips. Feet normal. Short; abd ant  
complete circle of areolae around feet plants  
and small central dark spot. Skin fine  
granular, rather opaque. Tubercles shiny.  
iv and v are quite remote, iv the higher but not  
on one tubercle. Actual hair tubercles darker  
than tubercle plates. Shields scarcely conical.

807

Pyralid webbing together leaves of *Chiococca*  
*racemosa* and pinching. Resembles 782 but  
more webby, not stitiches.

Hd rounded, periclyptal piece reaching vertex  
a little flattened before; green, brownish shaded  
on lobes; ocelli nearly black, mouth brown  
w. 1 ± Body moderately slender, segs. obscurely  
3 annulate, ant. annulate small. Transparent  
bright green, no marks. Shields transparent  
tubercle small, somewhat elevated color-  
less, normal ia + it, ii + iii, iv + v.  
Spinulae small whitish; feet pale normal  
setae moderate, white. A lively, backward  
running Pyralid.

Open between leaves with white silk  
Out Feb 10 1900 Cat no 15485 (Brown Tortrix)

*Cacoma purpuraria*

808 (see before 741)

Found me in woods above Kings, near  
hollow shiny and pale brown  
containing fine grass. Slight  
bladdery. Larva gone, but fine  
little white cocoon spun on  
next leaf is probably it. Out Jan

Leaf miners on *Randia aculeata* Palm Beach Fl  
Jan 23 1900. Min in upper surface marginal  
or becoming marginal, yellow, a large blotch  
white or without a tiny tapering tail from  
seg. punctate. Found on Country Road (all bad)  
Epidermis a little succulent. 28 1900 Cat. no. 15348



809



Mine between both surfaces, the  
mine with above and below  
on Coudalia ferrica Sw. "breakaxe"  
Palmer Beach Fla Jan 23, 1900  
A rapidly widening mine, brown,  
the tail black, in perfect an-  
a case cut out at the end.  
(Sent to Busck) Start from middle.

(See after 742 for note on larva)

810



Mine on upper surface of 809  
plant; the old mine shows  
partially below. Larva gradually  
widening, starting from the margin,  
much convoluted and directed  
finally toward center (to Busck)

Jan 24 got a live larva. Green, vermiform with band  
shaped claspers, thin feet 3-4, abd 6-11; joint 13 button trum-  
in fact, small. a black patch written behind head.

811



Large blotch mines on upper side  
of Chiococca racemosa Palmer  
Beach, Fla Jan 23, 1900. A long  
brown mine very slightly widening  
and suddenly expanding to a large  
blotch that may cover part of old  
mine (all bad) (Sent to Busck)  
Got 5th larva Jan 25 (see after 743)  
(Sent Busck 4 Jan 28)

812 = 834

Webbing leaves and eating in manner of 780  
and 790 but on Randia aculeata. Only pupa  
found Jan 23 1900. In spring of old leaves.  
(Out Feb 7) 1900 Cat no 15434 [Same as 834  
Partly spring larva had moved case onto  
the Randia. Case E. not a Randia leaf  
but like 834 plants]

813 [See after 750] (Out Cat 15779)

Feb 14 1900 One Hd .6 flattened, 2 to 3 rates, lobes  
full and bulging; brown between, ocelli black  
body long, slender but uniform, flattened, sq.  
incision not strong. Pale green, translucent,  
just dark green. Cx. greenish dark black lat. rim  
a large black dot ii 3 and 4; and fl. pointed  
darker magnified part. Tubercles minute, black.  
iii 12 larger; ii + v, vi and vii normal. Setae long  
black, those of anal plate conspicuous.

Leaf stitches on 809 plant Coudalia ferrica  
write the overlapping portion of two leaves with  
short stitches. Bunch both sides in tiny patches.  
Leaf turns yellowish and is usually moist from  
dew in rain. Sallow like etc when kept by larva.  
Hd .3 rounded, slightly lobed, free from 2. 2 to 3 rates;  
lobes full; between mouth dark brown, ocelli a black patch  
Body approx 13 segments, small, eyes folded and lobes but  
not upturned nor distinctly; sr feet distinct; incision  
not marked. Cx. large, shiny, nearly rectangular at  
front corners a little rounded and flat but com-  
pact. Feet normal, abd slender but short arched in a  
single row narrow, broken without. Translucent white  
a yellowish, feet green. Feet pale Tubercles minute, a slight  
ring along about like tubercle, i dorsal to ii, iii irregular,  
iv & v a line on sr feet, remote, vi feet a lower part,  
vii a top part and. On 9-4 ia 16 separate, ii+iii, iv+v.  
The following listed complete, 2 other tubercles normal.



also are rather obsolete. *Spargania* from minute.  
 Central segs long drawn out; thoracic c 10-13 contracted.  
 a fine mine for this plant. *Sparg.* Feb 21 Hd 1.7 (sh hd 1.05)  
 .26 .43 .61 1.02 1.7  $\frac{6}{10}$  (See after 833)

*Racheospila saltatoria* Hbst  
*Na Seous* ~~SV~~ 814 Cut Mar 28 Cat 15815 g  
 Y. leaf on *Sparg.* plant. *Condalia ferrug.* Friede.  
 Palm Beach Fla., Jan 24 1900. Hd 1.0 flat before  
 the lobes produced into long dark conical horns  
 light constructed centrally, a rather high. Dark brown  
 face fringed whitish and with fringed strokes on  
 lobes and esp behind them; mouth black brown.  
 Body slender, uniform: a large single green  
 central stripe on 2 with 2 approximates, dark brown  
 brown on summit, a little recurved anteriorly.  
 anal fl long, pointed behind, excipite before; shield  
 of anal feet large,  $\Delta$ , excipite below-post, feet  
 small, approximates to anal ones. Body stiff.  
 irregular when looping, dark green, very faint  
 fringed white points. *Sparg.* a series of dark  
 narrow brown interspersed dashes, finely edged, conical  
 to a darker green stripe on 10-12 then all conical  
 to a conical band; anal plate green; dark wings  
 brown, white dusted. Thoracic feet brown. Tuber-  
 815

*Myrphalid* larvae, probably *Pyrausta atalanta*  
 on *Parietaria debilis* Forst. Palm Beach Jan 24 1900  
 In bunches of leaves at apex of the tiny plant.  
 The plant is a nettle & they are surely *atalanta*  
 Saw a butterfly ovipositing on it apparently,  
 also on *Boehmeria cylindrica* but rare.

Cut Feb 11 1900 *Pyrausta atalanta* 15536  
 816

Blotch miners on the upper surface of the great  
 beach bean *Canavalia obtusifolia* DC Palm Beach  
 Fla Jan 24, 1900. Rounded brown blotches often with  
 a greatly extended outer white zone. Larvae feet  
 with square laterally produced segs. & pointed minute  
 (Sent to Busck)

816  $\frac{1}{2}$



Blotch leaf miner upper side of *Opuntia*  
*sea* sp. Palm Beach, Fla. Jan 24  
 1900. Large pale, irregularly  
 lobed blotches, the frons is  
 live. Apparently a larva to  
 each lobe (all empty)  
 (Sent to Busck)

DIPTEROUS

817 *Dieta leaf miner* for  
 Feeding similar to 801 but in *Echites* sp?  
 Palm Beach, Fla Jan 25 1900. Cat turned over  
 leaf, seen for a time and next to a case of web  
 and the whitish excrement with remains of leaf.  
 Hd 6 (to head) slightly bilobed full, round,  $\Delta$  high, the  
 paraclypeal piece to vertex; one distinct large  
 seta (ii) the next minute; pale luteous. Body short  
 & robust, segs 3 annulate the ant one very small.  
 Suberely slightly elevated, moderate, colorless. On  
 segs i+ii b, iii+iv b, iv+v; a abd iv+v. Hair tubercle  
 brown. Green, a faint narrow d. line and trans.  
 line on post. cubitus of each seg. a broad  
 faint whitish subtip. band. Shields concolorous  
 This Jan 27 Hd .85 all green like body. Same, the  
 lat. stripe very obscure. A bunch of first three  
 small first. Later lat. whitish stripe dark  
 above at spiracles, diffuse below, more banding  
 brownish, obscure except toward the extremities.  
 Later not gone, all green like a bit of the stem  
 with the whitish lat. shaded band. Short above  
 Cut Feb 13 1900 Cat no 15592



818



Blotch visible on upper surface  
of leaf of *Crinia aculeata*  
Stent at midrib and under  
rapidly, ending as a large  
blotch. Faint contour.  
Yana escapes (One good  
larva sent to Busck as "784-5")  
5th another Jan 26. 1st small  
flat, partly retracted. Body flat  
sep. moniliform like 811. Joint  
2, 3 large 4-11 almost alike, the

smaller & smaller, tapering post.  
translucent testaceous, edges of segment  
darker brownish; food green. No spots!  
feet normal. Dist (Busck)  
apparently

819

Case cutter in *Eugenia* 1908p Palm Beach  
Fla. Jan. 25 1901. Stent  
in substance of leaf and  
visible to blotch where  
case is cut. Case with  
slight lat. constriction  
(a little too strong in fig)

Resembles 819 but case longer  
and more stent in leaf.

(all had Jan 25) but a good one sent Culley  
case Jan 29. Button short & thick

not moniliform, columnar, but retracted apically  
dark, a dark spot behind it. (Sent to Busck)

Dist (Busck)

820

Exposed at first stretching leaves, finally in a  
hollow of leaf bent top side in with large  
silly web. Doubtless same as BB from  
Miami Fla. Palm Beach Jan 1900. All  
transparent green, apex of lobes a little red-  
dish,celli black and a black sd speck  
on joint 2. (To be in later, had, compared with BB 692)  
*Iponomea* spp. (The one kept to feed on parasitoid)

821

A ~ 2/00

Egg laid by ♀ "orange" *Callidoxys agarithae* on 797  
plant *Pathecolobium guadalupense* young

leaves Palm Beach Fla Jan 26, 1900.  
Cylindrical, the base scarcely narrowed  
flat, center a little longer apex much  
tapering to a blunt slightly more  
cylindrical point. 10 vertical lines  
from base to apex, smooth, but joined  
by obscure regular cross striae. Basal  
d.t. bright 1.0 mm. Silky white  
with pale yellow tint, later orange red

(One sample egg seen laid & 2 others & 3 larvae in same plant)  
H 2 mm entire smooth, surface marked by  
impressed lines, 5 moderate; orange yellow, cells black.  
Body yellow, slightly greenish from food, and edge of 2  
ochraceous. Cylindrical, feet short, normal; no plate  
sep. finely ± 6 annulate; sv folds slight. Setae white  
distant, stiff. Tubercle obsolete, dark. i dorsal to ii both  
curved forward. iii curved upward; iv & v a little s-v rather  
remote, short, not much curved. On thorax in 14 ii a  
seen (ii & iii apparent absent), v present, on subprimaries.  
The setae are uniform white tubes not tapering the tube  
somewhat obliquely cut. On setae condensed into  
a pump or ant. edge of 2 ii plate really absent. Pre-  
opercula tubercle with 1 seta Feet short, sv area  
contracted not visible. Skin finely reticulate with dark points

Sample
Laid Jan 26, 1900
Hatched (spelled)
Stage I
" II
" III
Reared by me!
Dis Feb 22 1900
Cat 15665



Pupa as to cuticle big cases, brown head, green mottled with purplish a purplish d line & a yellowish line on the sides with 3 irregular white spots on each side.

Feb 4 1900. Round yellow green tinted, 2 moderate; setae short white, both 10 and 20. Ocelli black, jaws brown. Body cylindrical, segs neatly 5-annulate, 3-4 folds rather distinct. Setae i stout, short black with darker dot at tip; ii very short and pale, iii short, iv & v a little longer. Setae 5-8 as before, a secondary similar seta before each below and one below 5-8; several brown on leg, all short, pale at tips. Color pale yellowish, the food showing faintly greenish. Skin with fine brown granules.

Feb 5 1900. Round yellow green ocelli black, even with 20 pale dots, pale green, annulate, a faint yellowish stig. line. i & ii large black, glandular, rest short & dense fine hairs, pale 20 hairs black dusky no shield. Cylindrical, moderate; feet moderate.

Feb 6 1900. Hd 1.5 mm Round, not lobed  $\Delta \frac{1}{2}$  to  $\frac{3}{4}$  lobes, setae not depressed; soft green, pale pubescent. Body uniform no hump, and feet round. Segs 6-annulate. 3 on each, 1 on first segment of 2, i & ii a 9 3-4, i & ii on abd black glandular; other lost. 20 hairs fine short black points from each large green tubercle. Soft green, a pale yellowish stig line from spiracle; 2 to black and flesh down the pale pink colored spiracle. Feet green, setae yellowish stipes more distinct but all same.

Feb 6 1900. Hd 2.6 mm Round, circular,  $\Delta \frac{1}{2}$ , 20 granules clear large white, setae minute. Yellowish green, ocelli black. Body cylindrical, uniform, segs 6-annulate, 1 annulus large. Soft green minutely dark green but hair tubercles pale yellow stig line 2 spiracles - hair small flat white on lower edge, spiracles contained flesh color. A brown dot below each. Feet pale. No large setae except on 2 and 3 and 4 (not glandular) when all the setae are somewhat larger. Ocelli 5 in each circle 2 in behind, all well above antenna, black ringed. Paraclypeal spine narrow, above  $\frac{1}{2}$  to 1 setae 2 spiracles from spiracle behind. Setae green lighter very soft feet 5-8 whitish. Skin many small obscure dotted with green spots like chocolate brown granules sparser than 20 hairs. Yellow stig line edged dark green above & below. Feb 9 had changed dorsal clear greenish yellow with large blackish green spots. Ocelli 2-4 on each annulus each side of dorsal, the dorsal a

granules being lost, stig line rather broad dark yellow edged above with blue ringling streaked & the dorsolateral (i.e. the blue 6). Subventral edge clear yellow green, then latter tipped with dark yellow. Still later feet white reddish & a crimson line between yellow and blue. 3 moderate J Feb 9 822

Leaf miner on Rosa herbacea 1900. all the insts old



Upper surface of Erythrina Peter Bench Fla, Jan 27 leaves badly blotched with mines. One of a few fresh ones found. Min round, oval widening to a moderate blotch. Mines visible below the leaf being killed through larvae escapes by gnawing a hole in the end of mine above. Some round granular, segs, minute, 2-3 wide

4 narrow, 5-10 a little wider & about equal, 11 & 12 increasing slowly, 13 elongate narrow. Colorless, granular, feet dark green. Hd. transparent, mouth brown, no feet. Hd. flattened, pointed, 2 broad, shaped and reaching nearly but not reaching a little above ocelli present blackish. Setae present widely laterally. Soft mine and spine transverse broad 3 cells and a transverse like wave along below. Feb 10 1900. Cat no 15494

(lost in jar)



823 Comment Feb 4. The feet 3-4, all 6-11, 12 double, transverse with haloes Linear twisting mine on very young leaves of Coccoloba glandulosa. Mines especially visible on both surfaces but have not by both in end above. Some before leaf is fully mature. Some fills mine, colorless, transparent, segs about white and but some with not minute, <sup>not almost existing within 2</sup> and brown, 2-4 large equal 5-6 small equal 12-13 tapering. Nearly round, smooth, is narrow not deep. Pale ochraceous translucent, feet faintly green. Hd pale brown, jaws dark.



*Macrurus nitens*. 1826. Genus XII

Ref. 3 rounded, not lobed, brown-black, and shiny.

[Antennae. 1st 1.4, 2nd 2.0. ~~3rd 1.4~~ 3rd 1.4. 4th 1.4. 5th 1.4. 6th 1.4. 7th 1.4. 8th 1.4. 9th 1.4. 10th 1.4. 11th 1.4. 12th 1.4. 13th 1.4. 14th 1.4. 15th 1.4. 16th 1.4. 17th 1.4. 18th 1.4. 19th 1.4. 20th 1.4. 21st 1.4. 22nd 1.4. 23rd 1.4. 24th 1.4. 25th 1.4. 26th 1.4. 27th 1.4. 28th 1.4. 29th 1.4. 30th 1.4. 31st 1.4. 32nd 1.4. 33rd 1.4. 34th 1.4. 35th 1.4. 36th 1.4. 37th 1.4. 38th 1.4. 39th 1.4. 40th 1.4. 41st 1.4. 42nd 1.4. 43rd 1.4. 44th 1.4. 45th 1.4. 46th 1.4. 47th 1.4. 48th 1.4. 49th 1.4. 50th 1.4. 51st 1.4. 52nd 1.4. 53rd 1.4. 54th 1.4. 55th 1.4. 56th 1.4. 57th 1.4. 58th 1.4. 59th 1.4. 60th 1.4. 61st 1.4. 62nd 1.4. 63rd 1.4. 64th 1.4. 65th 1.4. 66th 1.4. 67th 1.4. 68th 1.4. 69th 1.4. 70th 1.4. 71st 1.4. 72nd 1.4. 73rd 1.4. 74th 1.4. 75th 1.4. 76th 1.4. 77th 1.4. 78th 1.4. 79th 1.4. 80th 1.4. 81st 1.4. 82nd 1.4. 83rd 1.4. 84th 1.4. 85th 1.4. 86th 1.4. 87th 1.4. 88th 1.4. 89th 1.4. 90th 1.4. 91st 1.4. 92nd 1.4. 93rd 1.4. 94th 1.4. 95th 1.4. 96th 1.4. 97th 1.4. 98th 1.4. 99th 1.4. 100th 1.4. 101st 1.4. 102nd 1.4. 103rd 1.4. 104th 1.4. 105th 1.4. 106th 1.4. 107th 1.4. 108th 1.4. 109th 1.4. 110th 1.4. 111th 1.4. 112th 1.4. 113th 1.4. 114th 1.4. 115th 1.4. 116th 1.4. 117th 1.4. 118th 1.4. 119th 1.4. 120th 1.4. 121st 1.4. 122nd 1.4. 123rd 1.4. 124th 1.4. 125th 1.4. 126th 1.4. 127th 1.4. 128th 1.4. 129th 1.4. 130th 1.4. 131st 1.4. 132nd 1.4. 133rd 1.4. 134th 1.4. 135th 1.4. 136th 1.4. 137th 1.4. 138th 1.4. 139th 1.4. 140th 1.4. 141st 1.4. 142nd 1.4. 143rd 1.4. 144th 1.4. 145th 1.4. 146th 1.4. 147th 1.4. 148th 1.4. 149th 1.4. 150th 1.4. 151st 1.4. 152nd 1.4. 153rd 1.4. 154th 1.4. 155th 1.4. 156th 1.4. 157th 1.4. 158th 1.4. 159th 1.4. 160th 1.4. 161st 1.4. 162nd 1.4. 163rd 1.4. 164th 1.4. 165th 1.4. 166th 1.4. 167th 1.4. 168th 1.4. 169th 1.4. 170th 1.4. 171st 1.4. 172nd 1.4. 173rd 1.4. 174th 1.4. 175th 1.4. 176th 1.4. 177th 1.4. 178th 1.4. 179th 1.4. 180th 1.4. 181st 1.4. 182nd 1.4. 183rd 1.4. 184th 1.4. 185th 1.4. 186th 1.4. 187th 1.4. 188th 1.4. 189th 1.4. 190th 1.4. 191st 1.4. 192nd 1.4. 193rd 1.4. 194th 1.4. 195th 1.4. 196th 1.4. 197th 1.4. 198th 1.4. 199th 1.4. 200th 1.4. 201st 1.4. 202nd 1.4. 203rd 1.4. 204th 1.4. 205th 1.4. 206th 1.4. 207th 1.4. 208th 1.4. 209th 1.4. 210th 1.4. 211st 1.4. 212nd 1.4. 213th 1.4. 214th 1.4. 215th 1.4. 216th 1.4. 217th 1.4. 218th 1.4. 219th 1.4. 220th 1.4. 221st 1.4. 222nd 1.4. 223rd 1.4. 224th 1.4. 225th 1.4. 226th 1.4. 227th 1.4. 228th 1.4. 229th 1.4. 230th 1.4. 231st 1.4. 232nd 1.4. 233rd 1.4. 234th 1.4. 235th 1.4. 236th 1.4. 237th 1.4. 238th 1.4. 239th 1.4. 240th 1.4. 241st 1.4. 242nd 1.4. 243rd 1.4. 244th 1.4. 245th 1.4. 246th 1.4. 247th 1.4. 248th 1.4. 249th 1.4. 250th 1.4. 251st 1.4. 252nd 1.4. 253rd 1.4. 254th 1.4. 255th 1.4. 256th 1.4. 257th 1.4. 258th 1.4. 259th 1.4. 260th 1.4. 261st 1.4. 262nd 1.4. 263rd 1.4. 264th 1.4. 265th 1.4. 266th 1.4. 267th 1.4. 268th 1.4. 269th 1.4. 270th 1.4. 271st 1.4. 272nd 1.4. 273rd 1.4. 274th 1.4. 275th 1.4. 276th 1.4. 277th 1.4. 278th 1.4. 279th 1.4. 280th 1.4. 281st 1.4. 282nd 1.4. 283rd 1.4. 284th 1.4. 285th 1.4. 286th 1.4. 287th 1.4. 288th 1.4. 289th 1.4. 290th 1.4. 291st 1.4. 292nd 1.4. 293rd 1.4. 294th 1.4. 295th 1.4. 296th 1.4. 297th 1.4. 298th 1.4. 299th 1.4. 300th 1.4. 301st 1.4. 302nd 1.4. 303rd 1.4. 304th 1.4. 305th 1.4. 306th 1.4. 307th 1.4. 308th 1.4. 309th 1.4. 310th 1.4. 311st 1.4. 312nd 1.4. 313th 1.4. 314th 1.4. 315th 1.4. 316th 1.4. 317th 1.4. 318th 1.4. 319th 1.4. 320th 1.4. 321st 1.4. 322nd 1.4. 323rd 1.4. 324th 1.4. 325th 1.4. 326th 1.4. 327th 1.4. 328th 1.4. 329th 1.4. 330th 1.4. 331st 1.4. 332nd 1.4. 333rd 1.4. 334th 1.4. 335th 1.4. 336th 1.4. 337th 1.4. 338th 1.4. 339th 1.4. 340th 1.4. 341st 1.4. 342nd 1.4. 343rd 1.4. 344th 1.4. 345th 1.4. 346th 1.4. 347th 1.4. 348th 1.4. 349th 1.4. 350th 1.4. 351st 1.4. 352nd 1.4. 353rd 1.4. 354th 1.4. 355th 1.4. 356th 1.4. 357th 1.4. 358th 1.4. 359th 1.4. 360th 1.4. 361st 1.4. 362nd 1.4. 363rd 1.4. 364th 1.4. 365th 1.4. 366th 1.4. 367th 1.4. 368th 1.4. 369th 1.4. 370th 1.4. 371st 1.4. 372nd 1.4. 373rd 1.4. 374th 1.4. 375th 1.4. 376th 1.4. 377th 1.4. 378th 1.4. 379th 1.4. 380th 1.4. 381st 1.4. 382nd 1.4. 383rd 1.4. 384th 1.4. 385th 1.4. 386th 1.4. 387th 1.4. 388th 1.4. 389th 1.4. 390th 1.4. 391st 1.4. 392nd 1.4. 393rd 1.4. 394th 1.4. 395th 1.4. 396th 1.4. 397th 1.4. 398th 1.4. 399th 1.4. 400th 1.4. 401st 1.4. 402nd 1.4. 403rd 1.4. 404th 1.4. 405th 1.4. 406th 1.4. 407th 1.4. 408th 1.4. 409th 1.4. 410th 1.4. 411st 1.4. 412nd 1.4. 413th 1.4. 414th 1.4. 415th 1.4. 416th 1.4. 417th 1.4. 418th 1.4. 419th

11.0 Unchange except that the lobes had one more rounded, the points represented by a slight elevation on upper front side. 2<sup>nd</sup> setae even more distinct with rather large basal tubercle, the elevation on 8 and 9 almost shining with them. ]  
with small green peduncles. a green stick

Twice gradually under  
min. much twisted and  
contorted in upper surface  
of old leaf of Excelsior  
floridana. Thorns absent.  
Resembles 810 in general  
habitus. Palm Beach Fla  
Jan 27 1900. Hd. fls. brown  
juv. darker. 203 ant. 8  
green, segs small, subequal  
unifoliate. A dorsal vein-  
like brown stripe triangular  
widened in the center of each  
segment. Roof pale green  
and darker green. No fat on

2 months, about now on 3rd. All feet about 6-11, no hands  
seen on 12. Came out of nest & walked.  
Egg Feb 12 1900 Cal. nw. 15537

$$825 = 794$$

Butterfly eggs on Passiflora hullensis laid in center of  
spring leaf above, not on ends. I tend to see as with  
194. Ovary, tubercle, setae & leg plate black, hair with  
glandular tips and greenish; ocelli black. 4 mm  
egg orange high, conical ± 14 ribs with strong  
cross striae becoming few large cells at apices  
microstyle faintly reticulate. H 1.2 D .6 mm  
Shell Feb 2 like Chautauque. Spin on band and  
a body black orange with a whitish shade. Turned white  
with dusky spots = Chautauque.



Shed Jan 28 Hd .5" broad like perched ant that  
pouch directed forward; sutures impressed. Dull  
dark black-brown a little mottled; 2<sup>d</sup> hair  
present, short black. Body slender center of seg.  
a little swollen; all dark blackish brown  
with an olivaceous tint, under the hairs about  
fine longitudinal lines darker ventrally  
Venter of iv an elevated dark rounded spot.  
Legs ventrally dorsally shaded dark. All covered  
with fine short dark 2<sup>d</sup> hair from black tubercles  
Venter of iv protruded, segs finely annulate, all  
essentially as in the mature larva though darker.

Shed Feb 2 Hd .70 with character of mat. Black  
rounded hump iv and joint feet. Dorsal line on  
8 and 9. Dark blackish brown, a little  
lighter & greenish ventrally. Suffered from dark  
2<sup>d</sup> tubercles. Fine 2<sup>d</sup> setae black. Head joint distinct  
Ends 2-4, 10-15 orange black. No bands nor lines.

Shed Feb 5 Hd 1.2 over, 1.4 measured behind. Very dark  
at first as before. Shed Feb 8. Hd 2.1 Darker than  
the others. Venter shaded with black.

Shed Feb 15 1900 Cal no 15583

Set off from this month Jan 16. Cylindrical, ends  
rounded, one end a little more tapering than  
than the other, a scarcely perceptible flattening  
of the cylinder parallel to leaf as dorsal.  
12 read low rib reaching almost to the smaller  
end, becoming dotted at termination; stopping  
abruptly at the larger (microphyte) end in a circle  
of large quadrangular, indistinct edged cells at  
the same angle of which one a circle of white  
dots one for each rib. Within this the microphyte  
is somewhat coarsely reticulate. Ribs dented  
crested with a double alternating row of white  
dots. Ann striae fine, 11 faint. Fine dark green  
rib and circle of dots appear white. .65 x .55 x .5

827

Eggs laid by ♀ *Eurydes histrioides* night  
Jan 27-28 1900. Cal. no. 15349. Small and very  
very large eggs, separately; egg of diameter of mother  
body. Cylindrical centres, light ends wide, both  
rounded, base less sharply rounded,  $\pm 30$  low  
vertical ribs, not strongly marked and with a  
very slight narrow outline - a ledge; no cross-  
striae, no rets. Dull cream color, not shining  
later with irregular brownish freckles. D.I. D.H. 1.0  
Almost quite spherical; ribs distinct & intercalate  
Hatched Feb 8 Hd elliptical narrow above, vertex  
wide 2:  $\Delta \frac{1}{3}$ . Lateral sutures darker, 2 pairs  
head longer than broad from head a small hump  
11 body. Dorsal dark labrum with central smoky  
line; w. 6 mm Red slender uniform, a trace  
glutinous, feet on 9, 10, 13. Brown not centrally  
9, 10 feet very close, small long divergent; thin  
large colorless. No shields. Whitish with lat. fur  
not thin and a dark slate shade all over  
Spots - 11 including feet of 1st. Thin one sd (i-ii)  
lat, sty (iii-iv) thicker s-v. Tubercles rounded  
black, normal no subformations. Leg shield 9, 10  
are blackish with T-shaped black marks below  
the head shield of body 8-11 in position. S-v  
fold broadly whitish. Cth striped but more intense  
the brown part and become gray the whole length.  
Bare grass is *Spartina juncea* Willd. (Also a N. J.)  
[all died, apparently stuck a pair by dew one night. Saw  
large body; evidently turning raising one foot for them]



(792)

Apical mine on upper side is different but another on the under side will do for 792. A linear twisting mine, scarcely arching but curled about, finally ending in a blotch which usually takes up part of the old mine. White, numerous above the lower epidermis slightly raised, membranous. Only a few good and three or more.

(Sent to Busck Feb 15 1900)

Came out short, thick, flattened, all dark red the incisures, except 3rd containing yellowish white. Out before March 27 and got moulting. Cat. no. 15812

Calc .35 .50 .72 1.0 1.47 2.1  $\frac{2}{10}$

829 (cont)

Mine Feb 16. (Sh hd 1.5) Hd 2.1 Rounded, vertex rounded 2,  $\Delta$  about 3 or more to vertex held out flat, lobes quite full. Pale yellow checkered with angular spots of very pale brown, also streaked with thin color arcs and along m. antenae. Ocelli white. Black center in a black shade; mouth brown; antennae moderate. Tubercles mainly brownish. Body slender, slightly flattened as before lived. D 3 pale yellow alternating with 2 brown black; white on 6th; 5th 3 broad dusky brown all with 2 pale yellow very narrow ones. 5th pale yellow narrow enclosing white black narrow spiracles. A yellowish line along ix & x with faint brown above. Gaster pale, nearly colorless. Tubercles small black i in line or ii slightly dusky as before. vi distinct, vii to later found is white in this, yellowish green centers and slender with brownish pores.

C for Busck

single, hair  
pinned

Nov 2 1900

828

Borer in young stems of *Pisonia aculeata* Palu Beach Jan 1900. Spun right web above rose; young leaf & enter stem. Leaves a round hole first which grass is ejected. Cylindrical, segs short and rather thick, joining 2 annulate.



Translucent ashy whitish, no marks. Tracheal line white, 8 joints dark ochreous. Tubercles small brown black.

Feet small, pale except anal which is broadly black ringed. Anal fls large black; also extensive black. ~~Feet~~ plates ii-v and spiracles, 12 is small and branched, 13 still smaller, scarcely divided by nature. Skin slightly shiny. Number granular. iv & v approximately separated by about diameter of a tubercle, 10 closed. Cth elliptical blackish. Black. Hd round, free. Slightly bilobed, higher than wide, black shading to brown below,  $\Delta$  large, ocelli black. 10, it separate on 3rd. Out Feb 11 1900 Cat. no. 15523

829 (cont)

Body slender nearly uniform longitudinally striped. Dorsum broadly yellowish with occasional brown annular spots; a purplish brown line along i-ii narrowly separated by yellowish from a broad dark side line showing double, touching spiracles for 12 & 13 ii & a little dorsal and subdorsal yellowish dorsum. Slightly hair yellow, brown, brown line below ii; 20 fold pale, fulvous; subventer & ventral pale, washed faintly in brown. Tubercles black, feet pale. Spiracles black terminal. Setae long pale. ii a little dorsal to i through; iv & v albae; iv dorsal below spiracle v a black dorsal and anal. vi not much below iv but once past. vii on leg base in a triangle. Shield perfectly circular, thin anal fls. anal anal feet in little shaded with purplish. Anals 2 white circle.

Calc. 34 .52 .78 1.2 1.8 (all means Feb 16) (See before 828)



Eggshells flat, edge style, & overlapping. nearly irregular  
reticulate. Shell white. 1.8 x 1.2. Egg dark ochre, lined  
with colorless lines. almost as good as code egg. rim black  
marked & whitish line. Embryo within.

Ant. Episphindus Cat 15500 829 Stenicta inornatilis Hald

Hypomnemtid? on old leaves of Nectandra  
willdenowiana Palm Beach, Fla. Jan 28, 1900.

Resting not straight, in the center of a  
loose open web among the leaves. Very  
common but all gone but this one.

Hd. 8+ held out flat, flattened, D rather high.  
Face luteous, antennae brown, but on sides of tube  
3 black lines with 4 alternating white ones from  
mouth backward, continuing lines of body in  
normal position of head. A whitish vertical  
line II to median suture. The feet long,  
black, pale ringed. Body slender, nearly  
cylindrical; feet small, normal. Seg. margin  
not strongly marked. Venter dull green,  
dorsum lined with brown-black & white,  
lines of both colors of equal width. Pale line  
yellowish white except in sv fold which is the  
last one & greenish. Brown line dorsal, sd(i-ii),  
lat, superstit(iii) & sub-stigmatal. Tubercles  
small, black; setae moderate, fine. iv and v  
separate but approximate, v dorsal to iv and  
smaller. vii 3 setae in leg. vi OK. Two very  
brown faint sv lines, below iv+v and across  
vi respectively. Subventer of thorax dark.

Now 10.4 in an old nest like leaf skeleton but no web.  
Hd luteous, antennae and faint line back from ocelli brown.  
Body greenish uniform, somewhat, faint line back to sv fold.  
Hd Feb 2 Hd 1.2 Same but brown smoky on sides of tube  
above black lines. Body nearly lined with yellow green  
and brown black as before but the other lat. brown  
striae are much wider than the pale intervals  
which have become linear. Also 2 brown lines  
below sv fold. Shd Feb 8 Hd 1.8 yellowish brown, united rounded with  
red line joining round as line on sides. Setae  
& antennae tip black. Tube red. Rounded, 1.5 high, apex white under 20.

830 Ant Cat 15689 Feb 28

On very young leaves of "litch wood" Amomyia  
floridana, Palm Beach sea Jan 29 1900. Spin up  
a leaf neatly leaving a round hole at petiole.  
See ant and feeds on another leaf & back to house.  
Hd round, full in front, bilobed, almost cordate,  
narrowing below and the mouth broad; antennae  
moderate, clippers rather high but the outline shows  
not depressed; shiny black, smooth brownish; pale  
feet w 4 line. Body cylindrical, segs folded 3-segment  
colorless, yellowish, few green. Cth weakly conical  
pale orange. The feet rather large pale. Tubercle  
minute, setae small dark. On the is small, absent  
from it. ii 4+11 from small. iv sv. On abd is 10 clump  
approximate, in line v small. No anal plate. Feet  
short normal with vii ant-retruded. abd tubercle  
with slight dorsal process about 1/2 way between.  
Spring? Hd 1.6 same. Later all rounded red except anal edge &  
anal fold. Pale in crown & leaf-brown.

Ant Cat 15707

831 young larva dark red like stems  
leaves, much green, red mottled.  
Springing a delicate open web among the very young  
leaves of Amomyia floridana, Palm Beach Fla Jan 29  
1900, Larva rests on a stem or leaf web on the web.  
Hd 8 slightly bilobed, dark pale, slight & broad, green  
ocelli black, narrow brown. Body slender, cylindrical  
feet normal, ant tapering, segs not approximate  
sv fold rather prominent. Setae of complete con-  
plete. Free, translucent, dorsum bearing shield  
dark from narrow fine dark red mottled line  
becoming more opaque and dotted and very faintly  
on 2 which looks green. The dorsal ground color  
appears as about six fine longitudinal irregular  
lines. Tubercle small black. Dorsal to iv and  
v & line, approximating but distinct, a sv fold, v  
distinct; vii a big base, a group of 3. On 3 & 4  
if separate. vii 11 & a large round elevated deep  
black tubercle. Setae fine pale. No plate. Dorsum



832

Leaf of *Eugenia* 7902p folded  
on inside with a small box  
a ball of feces within and a  
fusiform white cocoon shape  
obliquely like a hammock.  
(Box 2 Jan 29 1900. Cocoon emerged)



833

Resembling 780 but on *Schoepfia arborescens* R. & B.  
Palmer Beach, Fla. Jan 29 1900. Earliest larva seen  
the leaf, a linear crooked mine, after numerous  
extensions, the feces pushed out the entrance  
hole a wide side. All colorless, fine green.

Later larvae mine the leaf  
leaves, fine green mine on a side  
and minute minute larvae (entranced  
with white milk).

Hd. 4 pale cocoon, minute dark brown  
eye black, a curved black line behind  
it a large C check reaching round

to new vertex & perfectly visible through transparent  
egg when hd. is retracted, Hd. round smooth & high.  
Body cylindrical, rather thick translucent whitish  
faint green. Segs obscurely marked. Tubercles colorless  
but rather distinct. Small. IV+V. Setae pale.

Hd. 6 Do. Hd. faintly brownish, setae of 3 brown  
and line on front edge of occipital lobes blackish  
Oth large, faintly testaceous, transparent. Body  
translucent, shaded with pale dots on side  
and dorsal of 10-11. O glands brown ringed, as if  
segmented. Anal feet transparent. Hair tubercle  
black, IV+V. Spiracles black, tubercle brown  
minute, feet pale. Setae pale, moderate. Feet  
normal, segs obscurely 3-annulate. Hair minute  
dark granular. O glands brown white bands on 10.  
372 and 4 Apr 1895. 6 glands dark brown, body very white  
and not marked, prothoracic dark, brown line.  
(Cross (Kusale))

814 call. .22 37 .61 1.02 1.7  $\frac{6}{10}$

Spun Nov 10

(814 cmx) [see after 845]

Loles produced with high cone as before but each  
with a broad low protuberance before and a  
little irregularly, mostly granular marked. Another  
white brown, black front & prothoracically. The  
foot color like head, black, held close to it, as  
the color of *Candalaria* trigs. 2 brown with 2 back  
gray points at tip. A low double blackish line  
below spiracle of 6. Corresponding to IV and V. A dark  
cone on 9 in position of 2 and a small bump 10 & V.  
Ends much continued, center long & slender. Feet short  
small 1st pointed cordate; anal leg slender trilobate  
leaf green, marked with white, fringed with dense  
granular, part of them green, a series of small inter-  
d. black. When a streak edged whitish fringed 7th.  
marked by dark spot, obsolete; 10-13 gray & brown  
obscure; humps blackish, a dark patch before feet  
10. 4-5th pale. A remarkable mixture of the young  
green stage that grow independent but of the old gray trigs.



812  
834 (v 900c) 8799

Oval webbing leaves of *[B. bayamensis?]*  
*Rivina humilis* Palau Beach, Fla. Jan 30, 1900  
webs in head and terminal leaves; later live  
in a bottle of dried leaf in which it finally  
fastens it like a *Phryne* case on  
back of leaf.

Hd 1.3 (H J) Higher than wide, bilobed, choppers  
high; dark brown, shiny. Cth large, brown  
slightly, marked, semicircular, edged with black  
marking a dark spot, angles and lat edge. This  
particular web elongate longitudinally, blackish  
brown. The feet pale with black line on each  
joint. Body cylindrical, rather slender, last  
seg tapering. Feet short, normal, crested is  
a complete ellipse. Tubercles small, colored  
with dark brown tubercles. On thorax i+ii, ii+iii, iii+iv, iv+v. On abd ii+iii nearly in line,  
iii close to the black rounded spiracle, iv+v,  
v nearly above iv, vi with elevated keel, vii of 3  
acton in a small straight line in leg base.  
Anal plate scarcely conical. Skin whitish.

Hd .65 Slightly color 2 lobes rounded, full, 3 high  
brown black, mouth brown. Cth large D, entire,  
black, shading to brown on ant. edge. Feet the  
feet black except basal joint, rest black tipped.  
Body cylindrical, tapering a little first. Feet with  
crested & ellipse, short normal. Whitish, translucent  
a faint brown irregular white ad dorsal and  
lat. lines. Tubercles whitish, the brown tubercles  
black; spiracles black ringed. Anal plate conical  
ovoid.

Ant Feb 6 1900 Cal no 15418



835  
Murex on back of leaves of *Sebas-*  
*tiana lucida* Hall. Palau Beach. Fla.  
Jan 30 1900. An irregular hour-  
glassed larva with lobes in  
different direction, finally  
forming a large blotch with a  
long fold in the thin back  
epidermis covered up with white  
silk. Below the larva was  
penetrating the thick upper side  
near the edge of the blotch.  
Hd round, 1.5 high, .55; high.  
brownish, ocelli black, mouth  
brown. Body round cylindrical  
incision well marked but not mouthpiece, not  
strongly tapering. Thor. feet large, normal;  
abd. strong, short, on 7-9 and 13. All colorless,  
whitish. feet dark green joining showing  
Setae and tubercles obsolete. (cf Cal. no 15359  
(Sent to Muske) Larva out (collected at end of leaf) v 939

836 = 837

On "quinto-limbo" *Bursera graminifera* Jacq.  
Palau Beach, Fla. Jan 30, 1900. Hd bilobed, full,  
choppers divided into high 5 part and small  
apical portion. Light brown, shiny, ocelli black  
mouth pointed, dark brown. (all ind. known  
in one of parasitic?) (L. Muske) (3rd inst Jan 31)  
Feet folded up fastened with sticky, white  
withins. Body cylindrical, the feet large  
abd on 7-9 and 13 large & distinct, none on 10. Segs equal  
11-13 a little smaller; segs with distinct or obscure  
2 annulate; whitish translucent, shielded concolorous  
Setae rather long, pale. 7 dorsal to ii, iv & v in line quite  
separate, vi long, vii on leg base. On the i+ii, ii+iii, iii+iv,  
Cth large D and pl. small. Hd colorless & feet, mouth brown





837 = 836

Ant (Bursch)

Blotch mine on back of leaf of *Junonia*  
lutea "*Bursaria garrunifera*"

Palm Beach, Fla. Jan 30 1900



Stem next to midrib a large vein  
at first along the vein itself  
then finally extends out into  
a subapical blotch bordered  
by the veins. Larva spinous  
thin, no sign above telephium  
the larva feeds on the third  
upper surface and a brown dead  
patch is produced on leaf.

Larva cylindrical, whitish, feet red.

Says reminiscent of *moniliform* (Sent to Bursch)

(Compare cat. no 15300). Larva out and made

larvae like 836, Feb 8. Larva feeding fresh Feb 7-9, 13.  
soluble, excrement tubes white. White with a dark leaf.

838

Ant (Bursch)

Leaf mine on upper surface of grass *Panicum*  
*divaricatum* Palm Beach, Fla.

Jan 31, 1900 Several loops, a lot of

parallel lines mine directed toward

apex, later confluent, then when end is

eaten, numerous small holes. Usually

a small space is cleared and each

larva with not a separate circular

piece of leaf. Larva 3.2 mm. diam.

(To Bursch) head very fat. the chrysalis and a

larva, large half high, D. 1.5 mm. wide D.

pale brown, surface a smooth brown, a black

and a brownish ocellus; 1/2 retrograde in 2.


Body translucent, whitish, dorsum very flat,

venter much more rounded; legs rudimentary

moniliform 2, 7 legs, 4 legs, 5-13

about alike 13 last smaller, dark red. No feet  
a large rounded black shield on venter of 2.  
Scales obsolete; no tubercles.

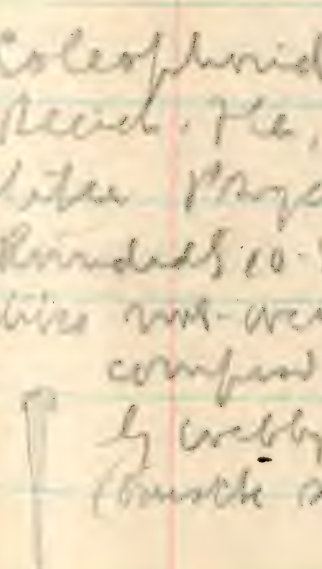
839 = 835

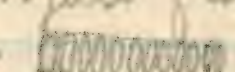


Leaf folder on *Sebastiania lucida*  
Whole end of leaf folded over with  
a neat triangular box and the  
inside protrudes out. Held by bands  
of silk on outside and edges secured.  
Holes within. Little hole above for  
emergence. Cocoon is a small  
folded leaf, but a fresh one and a

hole at corner for emergence of moth. Jan 31, 1900  
Palm Beach, Fla. No larvae. 3 cocoons  
Out Feb 4, 1900. Cat. no. 15373  
(N.B. This is spinning of 835)

840

Coleophorida? case on *Eugenia* 790 sp. Palm  
Beach, Fla. Jan 31 1900. On back of leaf  
like Phryga case resembling a thorn.


Rounded 10-sided of elongate form held in regular  
like not overlapping links  each side so  
compact, at end a group of loose fringes. Tied  
by webby silk. (to Bursch)

(Bursch says *Coleophora octagonella* Wals)



*Capnodes punctivenera* Sm.

Chet. March 17 1900 Cat 15786

841 = 796

Slender white noctuid on back of leaf of *Euphorbia*  
790 sp. Palis Head Feb Jan 31 1900 (= 796?)  
Hd round apic. Antennae obscure, free from 2. Small  
ant. projecting; pale green, ocelli black, tubercles  
brown, marking of. Spotted; mouth brown w. 6  
body slender, incisures well marked. anal feet  
stretched out past. Abd 7-10 very small & 7  
smaller & 8, normal 9 & 10. Pale green (tubercles  
brown) smooth, translucent, incisures a little shiny.  
Small, 11 & 12 largest, 13 dusky part. Setae long  
dusky rather coarse. No shields, tubercles brown as  
on the body, 14 pale without brown tubercles.

Feb 5. Hd 1.8. Hd slightly lobed; ocelli black, 4 above  
in curve, 2 below in line with antennae. Claspers 1/2.  
Pale green tubercles brown, setae black. Body  
same tubercles brown, 14 and 15 in a large spot  
others small.

Feb 8. Hd 1.4. Soft green, tubercles all rounded, red  
brown, 11 large. Glance, feet 1 & 2 a little small &  
6 & 7 below apical, 8 & 9 just, 10 & 11 nearly opposite the  
middle, 12 brown, but not meeting, 13 just to middle or  
above it. 14 below brown corner. Setae long, dark &  
pale 5-8. A faint brown reddish line. On below 11.  
Feb 11. Hd 1.8. Same. Reddish line then faint &  
broken with minute spots below, irregular, avoiding  
the tubercles. Markings trace of a minute narrow  
red line along 1-11. Antennae brown, gray tubercles  
brown. Soft, translucent, but feet not visible, not  
shiny.

Feb 14. Hd 2.2. Green, tubercles on head 1 body brown-  
red, incisures of tubercles 14 (1-11) dark, superficially (11)  
and very faint 12 & 13. Spine of 12 3x as long  
as other. 14 below long even as 11 & 12. Shape of feet  
very large. Setae distinct black. Rather slender &  
with flat, narrow feet. anal feet divergent.



*Hebiparion ligustrina*?  
(Kugel 741)

842

quadrate blotch mine on back  
of leaf of *Euettarda elliptica*  
Resembling 837. A winding  
slight wavy line, brown mine  
finally absorbed by the blotch  
which is bounded by the veins.  
Start next rib. From a central  
brown line in M. Palis Head Jan 31 1900.  
Larva flat, but retracted, brownish  
mouth dark brown. Claspers 1/2 below  
divided from the body & 1/2 below.  
Setae small, feet 2, 3, 4, 5, 6 small  
5-9 a little larger about alike, 10-  
13 tapering. Colorless. feet green, edge  
of segments darker. No thor. feet;  
abd 7-10, 12 small, without hooks  
Tubercles absent, setae obsolete (To Busck)  
2nd dark brown and came out to 1/2 in a spot of leaf  
on walking down under the feet. Chet Cat no 15658

843

Micros on *Rhus metopium* 2, webbing up and  
chitching leaves together. Palis Head Feb 1, 1900  
Hd 1.6. Large white shiny black. Body colorless, feet green,  
setae long, white. No anal plate, feet normal.  
Hd 1.2. Round, flat before, apex wide 2. A high, pale  
tubercle, oval, a blackish spot in a and one above  
and extending upward from ocelli. Body round  
translucent yellowish, feet green. Cn large, long  
divided by a very narrow white line, luteous in the  
center of each leaf & foot. d. the mine and a med-  
ian and patch shaded blackish. No anal pl.  
Hd rather thick, rounded, a little flat. Tubercles  
moderate, smoky, 1 larger than 11 & 12 small & 11.  
14 & 15. On dorsum 14+15, 11+12 normal. The  
tubercles are shining, radially corrugated about  
the edge. Skin dull. Setae white, Chet (Busck)



8. The white mottled band is not so extensive. Shed Feb 24 Hd 4 mm (Sh. hd. 2.6) Fleeting brown with insular d. blackish stripe. Vents & head light pinkish brown, regular dense with numerous large conical warts at the ends. 1st shiny black. Anal joint of antenna reddish. Epistoma shiny pale at sides mostly black. Ventrals of hind (above & below) in pairs - 8-12. Ventrals only, obscure. Feet reddish. <sup>not distinct of segments, about 1/2 pale with 1/2 brown, oblique round dentition & more red-brown.</sup> Auchen on 8/22 from plant *Quercus elliptica* Swartz, Palm Beach, Fla. Feb. 1 1900 Stage I? Hd round slightly lobed lobes full, moderate, pale brown shiny mouth blackish; w. 6 mm. Body ochraceous orange brown in incisures, a broad white dorsal stripe on 5-10 edged by a sd brown stripe that occupies all of dorsum of 11. 3-8 d. punctate brown. No c-sh. on anal plate, setae in groups of 5 sd on 2, legs normal, actiniform; shields elongate, dusky, tubercles colorless; i-iii 5 black, iii-vi 5-11 dusky i+ii 4 ii separate ii 6 weak remote apart; vi 2-lined. iii-v absent. On abd iv shy post, vi present elongate without hair; hair black spinulose, i 4 of 3-4, iii of 12 and 8-v one white.

Another (younger) differing whitish head color entirely 6-10 orange at the ends. All the tubercles dusky blackish. Stage Feb 3 Hd 9 rounded lobes full, moderate testaceous brown shiny, retracted and with only lat. warts. 3-8 large with long hairs overhanging head. Two ant. above shy ant, the upper the longer. On abd. i-vi present above, abate, moderate, ia trace smaller, iv shy post. 2-4 12-13 orange, 12 lightest. Dorsum of 5-11 and sides in hind band 5-11 dull brown. Dorsum of 6-10 and 8-v region (iv-feet) opaque whitish. Thoracic a small feet orange tinted. Abd 7-10 pale with concolorous stripes. Ventrals black; hair black densely whitish 8-v, most very abundant, large at ends. Late all brown except 12, 2-4 lighter than center of subventer whitish, the white body colored in dots along v.

Stage Feb 7 Hd 1.35 Round, orange testaceous ocelli; black yellow brown mouth area pale. 2 much retracted and c-sh warts, of 2 almost shy, or 3-4 copper large. Dark brown d. Subventer a feet pale, areas colorless. 2d antenae 3 dark reddish orange; 6-10 white in a broad dorsal area ascending ii; 12 orange, 13 pale except a narrow purplish d. band 12-13. Ventrals colorless; anal feet pale, extended. Ventrals

with d. band not even keeled. Spinulose blackish removed. Legs gray with darker d. line, vent-ban reddish. D. hair of 5-12 very slightly keeled, suggesting tufts though none are present. Late warts solid, dark, d. line, hair whitish <sup>single d. of 5-12</sup> abundant, black & white mixed, spinulose, longest at the ends. Black hair slightly more pointed d. a 5-12 but no tufts. White shy line 5-11. Legs purple, white retracted, hd, & ant 12 red.

Stage Feb 11 Hd 2.1 ± (Sh. hd 1.35) Shining dark red brown, a fine blackish line along the entire epistoma white. Body as before, dorsum 6-10 dusky gray-white cut by black dusky d. line. 4 and 12, except d. a 12 dull orange; rest blackish purple with narrow white line on 5-v fold; feet and venter pale and evenly colorless. A short black tuft from upper side of ii on 5 and 12, forming a dorsal tuft on 5, single on 12. Abate hair very densely dense, not concealing body, fine, solid, and blackish mixed with some long white one at ends. General tint of the hair is a foggy brown.

Ventrals pale, slightly flesh colored, moderate, round. Ventrals under lenses, well cut out a second of ant. with growth more solid, white suffused dull red dense parts lighter some purplish, and 5 remaining dark. Hair slightly reddish. Ventrals surrounded by white rings; feet reddish. <sup>large antennae</sup>

Stage Feb 15 Hd 2.5 Round, not high, full & round & somewhat convex on top of front. Shiny black, epistoma mainly white. Body and head gray, no markings except sd on 6-10 and 12 the point is light and pale salmon tinted; warts all pale salmon. Hair rather uniform, moderately dense reddish, much the color of dead leaves but lighter somewhat salmon colored like the warts, the long hairs ant. and hind whitish. A narrow whitish stripe along shy fold 5-12. Feet pale, <sup>shiny</sup> red dark. Ventrals long, and i, ii and v a tuft small, all well alternating actiniform. 2 much retracted with slight warts 12 5d light on 3-v, ii 4 and iii present as distinct undulations. Hair spinulose, short pointed to

15-1900 Cal. 1500



845

Large egg on 842 food plant

Palm Beach Fla. Feb 1 1901 Laid on a fine spray of grass that adhered to the plant. Rounded elliptical, not flattened, but one end larger than the other, the side drawn also wider than the other, very pale yellow, nearly smooth, faintly, somewhat broadly but finely reticulate.  $.6 \times .55 \times .5$  mm.

Hatched Feb 6 Hd. 4  $\pm$  flattened, round, not bilobed, color when below fleshy brown above, ocelli  $\therefore$  large black.

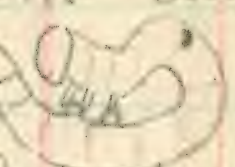
Body somewhat flat, rather short, rounded. Pale gray, feet both old & new, and the rostrum present or fold yellowish white. Tubercles elevated, small blackish; setae stiff black, pale tipped. Every 9 days faint, regular round distinct first hatched with pale. Basal in series 5-9 (folded) appearing on gray transverse lines. (and not eat the plant)

(814 cont)

Got one on young leaves Feb 26 in I. Hd. 25 round, slightly bilobed, pale brownish, joint 2 high collared in front. Othorax cylindrical, smooth, slender, legs short irregularly when walking, pale yellowish, smooth shining. Fat normal size, the collar molded centrally. Two small spines, rounded, greenish. The tubercles on setae except on ant. feet and a pair on anal feet, pale sharp enlarged at tips. Anal feet long pointed. Ant. head below with 2 small black subventral prongs approximate and large like the plate. Head even 2

Hd. 35 **I** rounded the lobes bluntly, lightly produced, a wide notch between; yellowish, anterior and mouth brown, ocelli black. Body cylindrical 2 with 2 high lines in front, anal feet long small, the black subventral ones projecting beyond. Greenish yellow smooth, no marks, minutely pitted. Pale an interrupted & brown line appears. **That was II** Hd. 55 lobes sharply convex produced. See sketch. Ant. feet on the sides. High double joint in 2, anal plate elliptical & pointed, the thick long subventral prongs reddish all over smooth, subventral pitted, also, a brown of line represented by dashes in the incision.

(776 cont)

5th ocellus clear below anterior, large broadly white on 5 and median suture, this color a line more than covering joint & pieces and reaching anterior with a faint double reddish line on 5 and anterior in space of suture. Sides whitish with many mottled brown lines extending forward & to caudal joint line on body. There are about 18 on each lobe, each obscurely geminate mottled with pale dots on inner  $\frac{1}{2}$  of each lobe, the lines are washed and intersected by strigose. 5 and joint 5 tubercles black, the others blackish ringed. Body slender uniform, all. feet 9, 10, 13. Smooth, nearly cylindrical yellowish white with many brown & black geminate mottled lines. Dorsal red brown, dark on a clear space of joint. 5 & 6 black lines with a large black patch in incision 5-6; 4 lat reddish line; a narrow black subventral joint; a reddish spot and subventral joint; 6 irregular broken sv line, black, enclosed by a dark black joint & dark sv line; next a reddish, the blackish and 2 reddish and finally a broad nearly black median-ventral band. No dorsal feet pale, marked with mottled lines. Spiracles black rimmed. Tubercles 1 setae black & small. 185 trace above middle; 6-10 between middle & lower corner, 11 opposite lower edge; 12 do and the spiracle in one line higher than on 11. Curls up in a green shape and is quick.  the black mark & incision exposed. **That was III** Sprung in the grass Feb 23 elliptical sitting next



Inga burserae Dya. n. sp. 24  
Cut Mar 6 1900 Cut 15717

846

Larva hatched on Bursera guianensis, Vahne  
Beach Fla. Feb 1, 1900. Hd 1.8 slightly apically  
bluish green from brown. A about 1/2 to vertex.  
Body cylindrical: thickest at front, 2.5, tapering  
post, esp on 13. Feet normal, anal divergent.  
Green, a yellow sd line 5-13 ant. Shields not  
conspicuous, 4 tubercles on ant col black, all else  
colorless; in substig front. Setae moderate. Pale.  
Shd Feb 4 Hd 1.3 do. ocelli black, 5 less than 1/2  
vertex. Small for body. Green. Feet darker  
sd line yellow 3-13 ant. with irregular  
yellowish spots in front on 2 & 3. No shield.  
Black tubercles on ant edge 2 white edged.  
Yellow stig line 2-13 ant. 12. Feet normal  
with long claspers.

Shd Feb 6 Hd 1.8 head soft green, ocelli black  
5 in C and 1 below behind antenna, 3<sup>rd</sup> longest  
pale brown. Body widest ant. anal feet ant. anal  
divergent. Translucent green, feet darker sd line  
3-ant ft. stig 2-13 ant. narrow yellow  
lateral narrow irregular yellow dots on body  
and on all feet. Setae reddish: tubercles  
small conical, setae pale. 6 tubercles on C-sh  
on 2 upper ant. mes. black. No shield, 15 below  
spiracle 7-10, 11 in line with 5, 12 below.

Shd Feb 8 Hd 1.8 head soft green, ocelli black, 5 in C and 1 below behind antenna, 3<sup>rd</sup> longest  
pale brown. Body widest ant. anal feet ant. anal  
divergent. Translucent green, feet darker sd line  
3-ant ft. stig 2-13 ant. narrow yellow  
lateral narrow irregular yellow dots on body  
and on all feet. Setae reddish: tubercles  
small conical, setae pale. 6 tubercles on C-sh  
on 2 upper ant. mes. black. No shield, 15 below  
spiracle 7-10, 11 in line with 5, 12 below.

Shd Feb 9 Hd 2.4 Larva head black, 6 tubercles on  
minute & conspicuous. Yellow line distinct, the  
irregular spots narrow, slight dorsal reddish  
mottling above tubercles 11 and 12.  
Spring Feb 12 Larva larvae & 1st inst. then

Post. 12 lower ocelli obsolete, only a pit present.  
Horn tubercles brown; spiracles brown ringed white centrally,  
arches 10-12. annulets almost alike. Setae curved from line.  
first (1) the highest, 2 (11), 3d lower. 847

Sammoides exitiosa larva. Hd rounded, full, somewhat  
flattened in front; clypeus high, the epicranial lobes meeting  
for a short distance, about equal to the width of the paraclypeal  
piece; a triangular membranous vertical piece clypeus triangular  
pointed above, an impression at each side at base and a  
smaller one below apex; paraclypeal piece regular, rounded  
above, a little narrowed centrally giving the outline of the  
clypeus a slight shield-shaped form. Antennae short, almost  
half as long as mandibles. Ocelli 5, four in a parallelogram  
behind antenna, one almost directly below it, the 2<sup>nd</sup> pair of  
the 2 smaller, each with minute central black pigment  
setae obsolete except about the eyes. Apex under 2. W. 2.6 mm.  
Light brown, shiny, smooth, pale above apex of clypeus. Setae red.  
Small paraclypeal piece dark brown; a black chitinous patch  
within antennae; jaws dark at tip; labrum pale.

Body cylindrical, somewhat tapering ant. more so post. Setae  
rather short, 3-annulate, incisures distinct. Subventral  
scales double moderate. C-sh semi-circular <sup>indistinctly</sup> strongly cut  
at the posterior-lateral angles. Pale setae brown edged.  
anal flap distinct, but no distinct plate. Spiracles moderate  
normal esp 12 which is twisted <sup>back</sup> a iii and as directed  
posteriorly on the sloping surface of the body, larger than the  
others and <sup>black</sup> more heavily brown ringed. Two feet short;  
abd 7-10 nearly sessile, a transverse narrow ellipse of crochets  
in single row, broken on outside & inside at ends of ellipse  
<sup>small single rows of</sup> ~~on 13~~. Tubercles minute brown, setae short. On 2 a  
seta in excised part of C-sh, prespiracular with 3, s-v with 1 hair  
ia & ib approximate, ii a ii b do, iv & v rather remote vi single  
on abd. i dorsal to ii and not very remote, iv & v, iv directly  
above v, vi on lower s-v fold. vii of 3 hairs near in line on ant. leg  
base. Skin white without marks, only very minutely shagreened.

848

Melittia ceto larva. Odo. Clypeus triangular but lower part 5 & 6  
ceto. an impression at base and very slight medial one on each  
side; paraclypeal piece regular, not narrowed, pointed above  
though a little less sharply than clypeus. Antennae short.  
Ocelli 6, 4 above to spiracles, 2 below behind antenna.  
Setae obsolete except about eyes. Apex do. W. 2.2 mm. Rather dark brown  
rest do. Body do but segs rounded somewhat creased but not  
distinctly annulate. C-sh plate do. Spiracles do but all black  
feet do anal with a single row of few crochets. 10-12 crochets in  
each 1/2 of ellipse, less on post half. Tubercles moderate colorless  
setae obsolete, arrangement do. White no marks.  
Horn tubercles colorless, spiracles black. Tubercles unusually reduced  
no annulets.



849

Aegeria tipuli formis. Hd. do. 847. Basal depression punctiform, no other. Paraclypeal prices following outline of clypeus, curved above and constricted opposite top of clypeus, not so below. Ocelli 6 in group of 4 above, 2 behind antenna all small & reduced. Epistoma black, crenate at the edges. Labrum dark. Horn shining smooth, mouth black, anteres do. 847. Width 1.2 mm. Segs 3 and central 4 small, elevated. C-H not distinct, concolorous only, faintly and at post. corner by the curved groove. Anal flap concolorous. Spiracles minute horn edged, horn tubercles colorless. Closets 12 on each row, small. Tubercles rather large, a little elevated, colorless & domed to ii, iii a above & behind spiracle, no seta; an elevation behind iv + v and one before vi like other tubercles but no hairs. Setae minute. (Th. was not made out) white, no marks.

850

850 *Exopoda* 6<sup>th</sup> which has notated lens.  
Scia pictipes. Hd dor. epicranial lobes meeting at a point only.  
 the triangular vertical piece almost touching paraclypeal pieces.  
 Clypeus near the angular, not distinctly truncate at lower corners.  
 paraclypeal pieces, rounded at apex & narrowed centrally. Ocelli 6 in  
 3 groups of 2, all with black pigment, distinct but not large. W. 2.6 w-  
 c. 8.5. Antennae brown, apex white centrally, also lv. Spiracles brown ringed,  
 hair tubercles faint brown. Crochets 7 feet 14-17. Tubercles arranged do.  
 middle annulus rather narrower & higher than the others. (ii)

851

Harmoria pini. Hd 84) do, ocelli do & <sup>trace</sup> colaterals just on post. lower, all brown  
with black pigment. Dark brown, uniform, tubercles centrally. Spot  
as in m. s. and sutures between S and para-clypal space pink.  
Sutures between pre-picea & epicranial holes pale. Epicranial holes  
meet only in a point. W. 2.3 mm. Segs 3 annulate, 2<sup>d</sup> (7) distinctly higher  
than the others. C-9 large, ring to spine do. Tubercles brown;  
spines brown ringed. Tubercles rather large, a little elevated colaterals;  
ellipses of crochets small, hooks large 6-8 in a row.

852

Asaphormia sequoiae. Hd do 847 the epicranial lobes not meeting, joined  
towards each other and approximate, the doubled black outline of pars clypeal  
pieces running through its vertical triangle. No upper impression. Cell 6 but  
lower part smaller, pigmentless, obscure. Brown, 8 darker, a pale area above  
and a pale stripe each side paraclypeal piece squalling them in middle.  
Setae distinct, ii and iv esp. large, only 1 rudimentary. 5 and pars 8 setae plain.  
Tarsus brown, joints black. epistoma pale brown. W. 2.8. Body plus below  
seg obscure 3-banded 3! small 20 highest tubercles large, colorless, setae  
coarse & distinct; hair tubercles brown, spinules brown rings; crochets 7-11.  
Anal pl. slightly corrugated with 5-6 tubercles round & elevated. On 6 & 7  
2 setae above, (1 on ant. off. corner, 3 on lower front 2 on a rounded tubercle, 8-V  
with 2 hairs. On 3-4 i + ii, ii + iii, iv smaller to iii than v which is ant. and  
low down. A brown rudimentary spinule behind iv; vi single haired.  
[Set tubercles from this standard]

853

Alcothoe cuneata Hd do 947 lobes somewhat broadly touching though gradually divergent above: vertical  $\Delta$  white a long median point, corolla black but just beneath colorless. Hd rounded apically than usual. Paraspines somewhat pointed above, widest below. No 20 pale brown almost fulvous above. Mouth near black.  $\Delta$  rather dark brown. 7 bristles above flat, hair tubercles brown. Stigmas brown ringed. Crochets 9-13 in center wide slit-like. Cutting line of 9th strong, broadly brown the shield itself scarcely colorless. Eyes alike - no good for large divisions - the perfect

3-13 and.

854

Quak (Hirsche)

Mucros on *Crotalaria pumila* Ortega, near sea at John Ranch, Tex., Feb 3 1900. Hd. smooth, feet & legs to angulate, joint swelling. Antennae & labial palps black & a dusky band along base of labial. Body dark and black. Tubercles centring the ends distinct small & small with large transverse spots & long black spots on feet, angles and along base of edge of. Head ft. broken. Body white translucent. Foot a narrow green line. 5 glands in 9 very large, dark purple. A series of 7 tubercles rounded & dark brown, 1st before i, stg. behind iii and apically, stv. small. behind iv+v. Tubercles small. From base of the i a set separate, ii at iii, iv+v. On abd. i dorsal to ii, rather approximate, iv+v. Feet short normal, thin. Abdomen except at base. vi with large brown patch. vii a few tubercles. Cocleate black on circular plate. Ring broken anterior & within. On 3-4 the stg. near patch as before ii and apex about iv+v. On 11-12 the stg. & stv. patches are also united.

Cart. 15638-9

855

Cat no 15638-9 855 Pet x J H 11.2 pupa before larvae  
 Leaf types on "white mangrove" *Laguncularia racemosa*  
 island in lake north below point. Feb 3 1900. Another  
 apparently same on "Spanish oak" (not taken). Screen came no  
 one on ~~Spokebury~~ at Lake Road (not taken). Leaves wanted  
 by throat. Resemble 843. Hd. & black shiny pale legs &  
 almost pale. Cyl large black, scarcely marked. Anal pl.  
 obsolete. Blackish tubercles. Body vivid brownish, other  
 unmarked. Segs smooth, incision folded, feet marked  
 black. Tubercles small, blackish, iv + v setae long  
 pale. On 3rd is very small, separate from 1st,  
 ii + iii, iv + v. 1st 11 of abd. nearly in line. 3 small  
 wingless ones, smaller first, a trace flattened  
 Hd 1st clypeus high but not to vertex, spiculae lobes to back  
 of head, no vertical line; 1d setae present pale. As before  
 but body covered white translucent not ochraceous. 2  
~~excess~~ winers Tubercles 12 dark. 1st feet black  
 except base of joint. Spiculae reniform, brown ringed  
 segs obscurely punctate or fold double. Tubercles, 12  
 base tubercles brownish. Island in lake north below point. Anal hb. curved  
 with black punctures



856

Blotch mine on upper surface  
of *Pisonia obtusata* Swartz  
Palm Beach, Fla. Feb. 5, 1900.

Larva fed in arcs like 818.

Escape from mine at end above  
a red line from about edge of mine  
1st flattened pale brown, clypeus  
light but not quite touching ver-  
tical triangle. Labrum and clypeus  
subventral dark brown. Body feet

2 wide 3-4 a little smaller, 5-11 about  
equal, 12 and 13 tapering. Segs incised  
well marked, the segs a little un-  
usually wider behind. Cyl large  
bisected in two triangular halves.

blackest purple with a few pale dots. Rocky  
whitish at sides, with a broad diffuse purplish d.  
band, faint round white spots 3-12. Very  
small on 5 and 12, often large (Feet not observed)  
When this minute spider body all yellowish only the c-sh  
dark. Bands over below & open in corner of triangle.

Jan Feb 27 1900 Cat no 15683

857

Linear winding mine gradually  
widening on upper surface of Live  
Oak, near Palm Beach Fla.  
Feb. 5, 1900. Larva with white  
above. Pale green, mostly from  
food; sutures of palpi, labrum  
marked brown. (to Busck)  
(Larva escaped before arrival - Busck)

858A Same species but on *Pisonia aculeata* 70426  
ii & v of the seen but small & obscure, ii & v seen above  
from iii. And iv & v. Cat no 15763

Busck

Jan Cat no 15671

858

00

Mines on 856 fed plant *Pisonia obtusata*  
Palm Beach Fla. Feb. 6, 1900. At first a mine  
with open hole like 780 and 833 latter eating  
(prun) patches a hole of leaf from a central



white web covered up by a ring of frass.  
glands, unisegmented 13 narrow, brown-  
marked whitish green, tubercles in tiny  
black dots. 1st flatish, a high, nearly band-  
ing ventral d, whitish, ocelli black, mouth  
pale brown. i & ii in line, i a trace dorsal,  
iv & v separate, iv dorsal, vi on lower s-v  
fold. feet short, slender, on 7-12 and 13. Di-  
scal slightly darker; 8 glands colorless. Larva  
darkish green, dorsal tubercles purplish black, on  
the ia, ii separate is small, tubercle for ii, i for iv & v but not  
on, can see on each. Pupae not fed, wing-margins  
green with diffuse brown black d. shape on abdomen.

859 Busck

Leaf mines in young leaves of *Waxia* on upper  
side. Palm Beach Fla. Feb. 7, 1900. Larva  
and slightly widening. finally a great  
blotch on upper epidermis nearly  
split off. This soon became tight  
on young leaf and curls the leaf  
like a delicate membrane, marked  
below. Ventral brown, longitudinal  
winding, leaf finally closing together  
Larva brown pinkish. 1st rounded, apex wide &  
a little flattened, a high & narrow, first  
touching central d a little depressed.  
Antennae, mouth brown, ocelli black. Body  
apical, not tapering, incision not  
deep, translucent faint yellowish. The  
feet short, abd sessile, 7-9 & 13. Sclerite  
pale, obscure; tubercles obsolete. On

Coron out Feb 10, all bright red, abd feet 7-9, 13.  
Shiny & corner



Calc. 29 .41 .59 .84 1.20 1.71 2.45  $\frac{3}{10}$

*Peridroma incisus* Br

860 = 127

Apr 12/80

Noctuid egg on upper side of 856 fruit bluish in large mass. Spherical, base flattened  $\pm 40$  vertical ribs diminishing irregularly to intercostation reduced to  $\pm 15$  about vertex, cross-striae distinct linear vertex conspicuously reticulate. Dark purplish, D. 6 um. Stage I Feb 6 (Palm Beach) ate bur grass. Hd .3. Wren, rounded,  $\Delta \frac{2}{3}$  sided luteous with brown flecks; ocelli black. Cph round, D. brown dotted, corrugated. Antraced by pale brown d line around ft. smooth, shining. Ths. feet black, ant 7-10 LPS with smoky blue. 7-8 & smaller. Cylindrical, 12 a little enlarged. Colours, feet green, tubercles several round black. Joint 8d, (i-ii) lat, stig (iii-iv) broad and 5-6, feet 1, when brown line. Tubercles round as subfurner, in stig post. On the iii separate. Stage II Feb 10 1st 45 rounded tubercles erect, whitish faintly washed with brown. Body green, four side-strip of bright brown, a white pulsing band between the last two, the ov. conspicuous broken. Dorsum rather broad, green, feet & venter pale, feet 7-8 very short. Setae black, tubercles very small, obscure. 12 humped. esp. in 2 obscure vertical bands, ocelli black.

Stage III Feb 13 Hd .6 whitish, ocelli black, mouth brown, a faint brown band across, 1/2 pale and one dark green scale. Below which are some distinct dark brown reticulate green, uniform in size, a little enlarged. Cph found luteous, almost corrugated. D. line white, narrow; 8d, lat & stig dark brown with 2 white lines filling up the space between them; below a distinct white line on 8-9 fold; a brown 5-6 band (vi). Tubercles & setae small, black. Leg shields dusky.

Stage IV Feb 16 Hd .8 Same. Body green, d line white, green edged; 8d, lat light brown; superior bundle darker purplish brown, substy white band; trace of brown 5-6 on 8-9 fold. Tubercles, setae minute black.

Stage V Feb 21 Hd 1.3 Green from Red green clay & blackish line to d. when, on back from ocelli as a parallel line between on back legs all somewhat reticulate.

Body green, noctiform, 12 slightly enlarged on shield, feet equal. Finely whitish & brown mottled. Setae d. & v. side line below ii present blackish. Substy broad white and centered 2 ant - anal joint a feet pale. Dark edged above. Tubercles & setae small black. Brown from 8d but head luteous and very brownish tinged, some brown most blackish green.

Stage VI Feb 27 Hd 2.1 Hd luteous, carinae line as before blackish, reticulate. Body brown like dead grass with a broad white substyreted band 2 ant - anal joint, broadly filled in with red, slight cut by spiracles except 2 all when it becomes below them. Dorsum marked with red-brown, faint lined. Setae d. & broken 8d black powdering appearing as d. in line, 1 8d seg black speckles & double obscure brown lat band 5-6 venter red mottled, dark brown shaded below 5-6 band white & short edged on both sides. Feet pale. Tubercles small black. Cph pale, trilineate with whitish; anal pb. slight present, venter like body. 185 rounded, 6 narrow, 7-10 below variable, 11 below spine, 12 above middle by shield transparent with 3 black tubercles in d. Stage VII Mar 4 2.7 Same. Substy band broadly redish carinae narrow brown spotted, leaving a short edged white line above below. Other lines as before, a lighter more yellowish brown space in the middle of side. Spiracles white, black edged.

Ant Apr 10 1900 Cat. no. 15840

861

Miner on under side of *Verbesina virginica* L. Palm Beach Fla, Feb 9, 1900 Miner blotches, a little swollen and red above, brown below, finally rolled up into lustrous furrow. A white cocoon strong in the hollow mine. Reflected water-proof strip & not waving much till also rolled - rising when cocoon to angle mouth prominent, brown venter black. 1st cocoon 1st, apex under 2. Body whitish, no markings.

One out as feeding for Bristol, Cat. no. 15524



862

Hooper on *Andisia pickeringia*, young leaves, Palau Beach Sta., Feb 10, 1900. Hd. 35 mm whitish with a straight brown stripe up the middle to vertex and one on each side across ocelli to lower angle of cheeks, the 3 meeting in the mouth. Body rather thick tapering a little at the ends, normal feet, smooth cylindrical, incisions rather well marked; very obscure annulets, whitish, green a broad diffuse d and subdorsal brown stripes, joining those of head reaching ends. Feet short, pale. D. stripe darker spotted in the incisions. Setae very fine & short, dark; tubercles obsolete. Subprimaries present.

Shed Feb 13 Hd 1.1 (shd 7) whitish, faintly brown. Lateral stripe and antennae red brown. Dorsal stripe absent on 8, ending midway between pale red, plus reddish. Body cylindrical solid bluish green, from joint 2 and 10-13 pale, whitish; a row of 8, round black spots on segs, and almost 2 in incisions 6-9, appearing 8 a broad reddish shade on thorax and 14-13. S-v stripe brown, brownish red diffuse, 2- and part on which it runs narrowly, vertex unspotted. M. smooth.

Shed Feb 15 Hd 1.6 (shd 1.1) Round, slightly bilobed, less than  $\frac{1}{2}$  to vertex, yellowish green, mouth brown on outer with reddish; a dark red band from base of jaw over black ocelli to occiput. Body cylindrical, thin smooth, normal. Setae fine, obscurely broad longitudinally with whitish green, a broad diffuse s-v red shade. Round d. black dots on 6-8 and, ends faintly marked with reddish. Tubercles minute.

Immature leaf miner of white leaf, decaying, 8 central line

Setae short, dark. Venter slightly whitish. The reddish suffusion at ends increases esp. s-v; is as exactly the color of the young *Andisia sterni*. Later faintly reddish mottled & lined throughout. Shed Feb 21

Ant. 15743

*Phryganis argentea*

863

Free feeding. Head conical, not moniliform, a little depressed at ends. Whitish translucent joint green, 2 plates orange, tubercles large white, setae black, 12 on 11, etc. very minute, 12 on 11, slightly notched except distal 2 is a flat. 12 on 11 have 5-6 fold. Ant. 15743. No 14, 15 + 16. 17 from dot with black setae. 18 pale, minute joint

Linear leaf miner on upper side of *Ira frutescens* 2 (also in the back) Palau Beach Sta. Feb 11, 1900. Larva with black central stripe of green except at tip. Larva not by hole above (also a dipterous mine a same plant) and a thin delicate circular web on back of leaf with a hole in it. Larva curled with flattened segs slightly moniliform subequal, rounded tapering. Pale yellowish green tint, not shiny, 13 on 11 (12 on 11) and in this circular cocoon and even on the young leaves first exposed. Rotted white cocoon on this plant shed Feb 24 1900 Ant. 15672



Eucereon confine

864

testaceum

Egg on leaf of 863 plant covered with vine of large-leaved milk-weed. Phyllosticta viminalis May (?)  
Balm Beach Fla, Feb 11, 1900.  $\frac{2}{3}$  spherical, rounded, smooth. White, translucent with a pale green tint, not shiny. Pts. small, irregular, hexagonal, slightly raised, about white all over, distinct. D. 9 mm.  
Hatched Feb 12. Hd slightly bilobed whitish. 2 high ocelli black, minute brown; 4 mm. Body all white shield concolorous, tubercles large & aciciform, faintly stony. Feet normal, aciciform. Ant. long, stiff. Pale ii black, also iii but feet also long black hairs base pale tips. Vents i-v, no subspiracles; legs shield pale stony. Later tubercles, i and iv small. On the 14th inst ii a large, ii b reflexed feet, small. Cth small, reddish, concolorous. Hairs all single for I.  
At the milk weed, refused 863 plant and Thickania. is a 1st of 3-4 are black, ii a white, but all on a single dent with a projection behind. On abd. iv is stg. feet. Later pale yellowish, feet faint green, tubercles pale & white double on the sides. 2 retained and with very weak shield. No anal plate.  
Hairs of 13 and i-iii in one tubercle, iv and v on another.

Shed Feb 15 Hd .5 mm, rounded, slightly bilobed, greenish pale yellow, ocelli narrow black. Body aciciform normal pale yellow, a brown shade from feet. Hairs large, perfectly unicolorous. Hairs long, straight and rather stiff, deep black and pure white mixed, black predominating d. white s-v. 2 small i retained, 3 & 4 rather large feet all pale. no shields. Only one sd wart on 3 and 4. i of abd small, as also iv and v, but all several haired. Feet very fat, increase well

number, hairs of a double white d. line visible in center of segs.

Shed Feb 19 Cth much absent, a few weak hairs; last. proth. much small, few haired. 1st inst 3c. 4. Hd brown, round, bilobed 2 above  $\frac{2}{3}$  to vertex. Ocelli black; W. 1.0 mm shiny pale yellow. Body pale yellow with a black d. line 3-12, broken at the ends, dotted and most def. white edged. Feet large pale. Vents moderate, hair abundant, long but of irregular length, long at the ends 3-5, 12-13, covered grey from a nearly even mixture of black and white hairs, rather stiff, spinulose, the long ones finely pointed. Feet greenish 12 at sides a little more yellowish. Later black d. line and a series of white, irregular dorsum shaped d. spots 5-11, 2 per seg. smaller and confluent. Also a narrow yellow sd line 5-11 below ii.

Shed Feb 24 Hd 1.8 pale yellow, ocelli & joint black, labrum white at tip; brown, rounded, broad out flat. Body and vent colorless slightly yellowish, esp at ends of thorax and 12, and distal greenish feet. 6 brown olivaceous black d. stripe narrow by ii and partly disappearing i and ii visible in the center of segs, reflecting some white, reaching 3-12. 6 yellow sd line below ii, 5-11 rather i incidence. Hair irregular stiff, straight abundant, black, white, the white much predominant along a number of hairs at the ends much longer, branched. Vents i-iii and vi large almost continuous, i a little smaller. iv and v minute 2 tubercles, heavier dorsally. Feet with 1 large sd wart. Superficially resembles Hyphestrina curica. Later the d. black becomes a pair of white lines from a d. white line narrowing at i, widening to ii and continuing a d. and d. concolorous polyangular black lines across post when they remain all black.

Shed Feb 28 Hd 2.9 round and bilobed, black, slightly shiny surface of the mandibles short shaped, choppers and one. Labrum narrowly olive green as also epistoma and anal. including anal joint. Tip of labrum pale; ocelli also pale. Body a little flattened ventrally, anal 1 with narrowed at the ends. 2 retained and small without hairs; anal feet with wart (after 865)



865

In soft web at end of short, young leaves of  
*Pithecolobium quadrilobum* Palen Head  
 Fla. Feb 12 1900. Hd elongate, notched, but  
 scarcely wider 2, 2 high, mouth projecting. Green  
 with brownish brown, cells large and  
 black, forming a distinct black spot; w. 4 ±  
 body slender, cylindrical. feet slender long  
 and normal, solid greenish, translucent, all  
 mottled with brown, faint except latencies  
 where the color forms almost a distinct line,  
 and by narrow, wavy line adjoined, <sup>sub</sup> (iii) and 5-v of  
~~whitish, 5-v whitish~~. Setae long, pale, tubercles  
 minute, iv and v separate, not very remote, a line.  
 (Cont Mar 7 but lost)

(864 cont)

Warts large, rounded or slightly, one set in 3-v  
 a pale spot indicating ii to, i-iii and vi large,  
 iv and v small, but distinct warts. Body black  
 dorsally & in center of legs down to the feet  
 pale greenish ventrally and in incision of a  
 the level of iv where a trace of a white  
 oblique line, only anterior. Warts dark flesh color  
 contrasting with body. Hair usually black, but  
 mixed with grey & white esp subventrally. The  
 long hairs at ends of legs white or speckled black.  
 Hair long, rather even, coarse, spinulose, the long  
 one at ends numerous. Feet all pale as above  
 in incision narrowly <sup>seen</sup> white. Spinacles white  
 2 all pale greenish. A slight black d. tuft on 12.  
 Spun Mar 8. (Cont Mar 26 Cat no 15808)

Enclosure confine 178

v carolina H. C. W.

866

An opening up 855 in case which was in other anyway,  
 found a Hyponementid and a Hole beside pipe 134-2  
 Hyponementid in web on *Tanacetum*. *Raccusa*  
 in nests of 855, Feb 12 1900 from island Yala with  
 (Oct 1.) Head 2 high, apex wide 2, head flat, mouth  
 projecting. Green, mottled with brown esp above.  
 Body slender cylindrical, scarcely tapered, no  
 shields. Dull green, opaque, mottled with brown  
 hairiest & a line, obscurely double but thick  
 below ii and just covering iii; a narrow broken  
 d. line, edged by ad-dorsal lines of ground color  
 5-v thin brown mottlings fade out, feet pale.  
 A black ring about ii in 3. Tubercles black,  
 setae long, pale, <sup>brunish</sup> legs divided into 2 an-  
 nulets by a narrow line, i-iii in line.  
 iv & v closely approximate but of separate  
 tubercles, v dorsad by its diameter and a  
 little smaller. Spinacles round, yellowish.  
 On the i & ii closely approximate, i a small.  
 On 12 iv & v in line, approximate. Cth perfect  
 unknown with 6 setae, normal. Lat. there  
 is a small 3d and annulets.  
 Another Feb 21. Soft web only in the young  
 opening leaves.

(Cont Mar 7 1900 Cat no. 15722)

C. as *Saracota planigaster*

H



very good deal. Another, head red but 2 reddish stripes  
 but head (1) black a bit purplish in shape, dorsal fully  
 yellow. Head not 7, 4 purplish. (3) reddish, spiracle black.  
 Cph brown insect, a sly 15-V (1) purplish brown all in green  
 ground that greenish mottled. **867** Oct Mar 1, 1900 Cal, 10394

*Nola* on *Lamprolaima racemosa* (with 866)  
 Separately flattened, 4 rows of warts. Head about  
 feet on 8-10, all normal for *Nola*. Hd small,  
 small, below 2, a broad triangular, rather high.  
 whitish nearly colorless, jaws brown, ocelli black  
 W. 8 ± mm. Reddish luteous, 3 or 4 somewhat  
 broad on a dorsum. A broad black red  
 stripe, faint on 2, narrow 3-4, wide 5-12  
 where it ends, covering two upper warts.  
 On 6-7 in a sum and 12 the pair mainly  
 from narrow yellowish d. line of ground  
 color, a reddish circle on 3 & 4 somewhat  
 broken. Sides reddish but vent (3) yellow.  
 Feet and venter colorless, nearly colorless.  
 Hair short, dusky, long and pale from  
 vent (3), only a few from (4) which is colorless.  
 Anal flap pale. Cph scarcely compressed,  
 brownish insect.

smaller whitest, d. brown stripe edged by broad  
 red band of reddish mottling, a reddish green.  
 On in apparently silver-white covered with fine.  
 Another pinkish, nearly fresh (larger)  
 silver channel. None Feb 21 No web at first a  
 leaf mine with hole, later cutting channels at  
 patches so that they turn brown.

*Opesia (involuta)* **COX 16**

**867 1/2**

*Coleopterus?* leaf mine in young *Forestia porphyra*  
 Palm Beach Feb 15 1900. Mines about orange finally  
 filling leaf and goes to another. Feet, pale whitish  
 an orange stripe along the orange (S-V) (red) 1st &  
 Cph black brown (in alcohol) The feet black & white.  
 (send to Brooks to read) *argopistes scytoides* Dec  
 a beetle. Oct Apr 8

**Referred to as 8868 in article**

**868**

*Stenobothrus* (Pterophoridae?) in *San frutescens*  
 Palm Beach, Fla, Feb 13, 1900. Hd round, full  
 above, small, the whole minute short notched  
 at vertex. Pale brown, sutures of 2 smooth and  
 foot ribs, of lobes dark brown. W. 1 mm  
 Body cylindrical, thick, squarish truncate  
 behind. Cph reduced, membranous. Insect  
 2 dually behind it in a [3 area thickly raised  
 with granules. Warts i & ii narrow, transverse  
 granular, iii much, iv & v in line, rather  
 dense, v small; vi and vii mixed with a  
 few 2<sup>d</sup> hairs. S-V act on leg base. 13 broadly  
 roughened, a rimmed disk with two stout  
 hairs below the center of this oblique disk  
 disk erect with dorsally curved tip, black.  
 Disk heavily fringed with stout hairs com-  
 posed of the setae of 13 and anal feet and  
 some secondary, all alike stout & brown.  
 12 has a narrow d. shield and its spiracle  
 is raised and turned obliquely upward.  
 Sordid yellowish, shield dark luteous, disk  
 blackish brown; a geminate irregular brown  
 d. line, a more irregular S-V line with  
 pale central blotches in center of each seg.  
 irregular brown mottling, seg. and a S-V  
 fold, quite dark but not distinctly  
 channeled into bands. Feet normal with  
 large crochets in a circle broken on the  
 outside. iii a & b not seen. Setae single.

(Last one left died May 28)



(Drypetes)

869 *Drypetes crocea*

Pyralid on young leaves of *Spectandus willdenowianus*  
Palmer Beach, Fla. Feb. 15, 1900. In a house of  
web, delicate that disappears after larvae  
are gone. Not frequent, but in company.  
Hd. .75 bilobed, colorless, s & vertex. Cth brown  
rust, greenish midist. Hd. greenish with brown  
brown sd stripe, band enclosing i and iii and  
completely on ii. Ant. not coloring the sandish  
greenish rounded tubercles. Ant. pl. sandish.  
i-iii large, iv+v and vi small, pale, concolorous.  
Setae moderate, pale. When full of food all sandish  
greenish. Tubercles i-iii blackish, iv+v & vi less  
distinct. Trace of whitish edges to sd line.  
Hd. 1.5 Brown, round. Bilobed face & face to vertex  
mouth large; greenish, faint brownish on vertex.  
Tubercle pale but all strongly black ringed.  
Vertex scarcely arch 2. Body somewhat flat,  
uniform, tubercles i-iii large, on 13 somewhat  
enlarged and prominent; iv and v small black  
with green, ix distinct. vi small, vii of 3 or less has  
the two lower pale. Pale green, a faint blackish  
sd band, slightly broken up by pale ring, about  
the tubercles and interspersed mottling.  
The pair young post. on 13 and ant. by the  
large blackish, scarcely marked Cth. The sd  
band nearly enclosed i and iii and does not  
quite touch a faint white bordering line about  
1 below, the upper crossing; the two stipulated  
Tubercles black setae moderate, pale. Feet pale.  
On dorsum ia+it, iiu+iih, iv+v, Ocelli 3. See  
dorsum enclosed in by i, ii, 12, stopped by 13.  
i well dorsal to ii.

Set. 17 got blackish in dorsum and entire earth

*Drypetes crocea* Fabr.

870

Stem borer in *Euphorbia helioscopia* Palm Beach,  
Fla. Feb. 16, 1900. In young plants head, with  
up the head with side and face and lines  
down the stem, eating its epidermis so head  
withers and forms a rotten mass with frass.  
Hd. 1.0 Yng. bilobed, lobes notched by vertical  
s, clypeus to the triangle black, clypeus pale.  
Labrum almost whitish. Ocelli 6 in 3: semicircle.  
Hd. 1.9 Round, rounded, face & face to vertex  
blackish brown, anterior and side black.  
Labrum pale, Ocelli 3: colorless & not bent.  
Cth & tubercles black. Body greenish, smooth  
articulate with red-brown. The feet black.  
Abd. normal. Body a little flattened. Setae pale  
webbing among hds and eating into them.  
Tubercles round, black, i dorsal on ii, iv+v on c. Single  
round tubercle, ix above; vi distinct, vii a round tubercle.  
On dorsum ia+it, iiu+iih, iv+v, all rounded tubercles.  
Segs 2 annulate, Cth pale brown, tubercles large but not  
larger than ii, iii large, iii a before, above spiracle, iv+v  
on above the other. Body pale brown, faint  
coarsely mottled with reddish, spiracle brown.  
Setae dusky, rather long. Skin not shiny,  
minutely granular, anal plate rounded, concolorous,  
not plate. (Max. Hd. 1.9 not bent). Cth moderate,  
brown, bristled, anal pl. large, pale brown. D. vent  
dark, mottling brown. Ocam looks pale and  
sd, ybg. and brown of s & lines. Tubercles shining,  
body dull. Each larva a little egg post. Spiracle  
912 moved dorsal of other a large white larva  
20 mm long 4 mm thick.

Spins a large webby cocoon

Ent. Mar. 14 1900 Cat No 15771



Calc. .6 1.0 1.6 2.7 4.5  $\frac{1}{10}$

871

Splung? egg on Randia aculeata singly on back of leaf  
Valme Beach, Fla. Feb 17, 1900. Ellipsoidal, flattened  
above & below, rounded, uniform. Shining papery  
yellowish green. Slightly bluish green without reticu-  
lations. Size 1.3 x 1.1 x 1.0 mm.

Hatched Feb 18. Body, segments light red, 2 small, pale  
yellow, not shining. Eye black w. 6 mm. Body  
cylindrical, normal. Pale yellow, dorsal large  
lign, nearly erect and curving forward. Back  
minutely setose with i at tip. Other setae short  
pale, rather stiff, the shaft blackish tinted, tips  
very minutely widely cleft. i and ii in line, i a  
trace dorsal, iv subeq. v higher and ant; one  
seta on outside of flesh. On the ia+ib, ii+iii  
in line longitudinally, iv well ant; no subpremae.

Shed Feb 24 Hd 1.0 round, higher than wide, 2 small  
pale granular pilose, ocellus black. Body  
cylindrical, normal, 8-segmented, dorsal large  
lign, curving forward, mutant. Green, dorsal pale  
granular, forming trace of sd line 3-segment. Horn black  
dilated with pale center and red at base on 12  
and a touch on 13 ant. Uniform incision not marked  
sd line remains in this, on abd seen resolved into faint  
oblique, the most distinct from horn to foot of 10.  
Later oblique of 8 also distinct like 12, the sd and other  
oblique just traceable.

Shed Mar 3 Hd 1.6 round, rising circular before, a  
little higher than wide, erect, shining granular  
2 very small. Green, white granular, ocellus marked  
black. Body normal, horn large (3 mm) erect &  
curving a little forward. Green, white granular; a  
narrow green d. line; oblique white the ones  
6-4 (forward & downward) and 12-10 round & distinct  
the intermediate faint. A faint longitudinal sd  
on 2-4. Horn red-brown, a dilatation before the blackish

Apr: 13 d. sternal with red-brown. The feet reddish  
terminally; abd. green. Spiracles pale & conspicuous.  
(Shed March 11)

Referred to in article



872



Leaf mines on under side of  
*Cissus bipinnata* Nutt., Palm  
Beach, Fla. Feb 17 1900. A thin  
winding folded arcuate line with  
black central line of green can  
a patchy folded edge of leaf. all as is 800.  
Yarns flattened, irregular, jaws protruding x four.  
2, 3 large, 4, 5 smaller, tapering, joint. Colored,  
a narrow zigzag dorsal line on each side  
along the outline of the body, absent in thorax  
(Sent to Busck)

Only immature?

873

NO

H&D Nov 15, 1900

This must be the Tortrix. Busck describes the Tineid *Orthocentrus*  
in *Reverend* leaves of *Iron frutescens* in a soft  
web Hypocnemis-like larva resting in the web.  
Hd 6 and flat, rounded, vertex scarcely raised.  
Green, brownish shades on apex, ocelli black.  
Body slightly flattened. 20 feet prominent eyes  
obscurely 2-annular - green, vertex entering as  
dorsal half, faintly bluish marked with white  
leaving 5d, lat. & stig & line of ground color.  
Tubercles small, dusky, 10th moderately large.  
Jaw ii in line, iv and v (dotted) approximated but  
separated by dorsal & tubercle a more or less  
vi on green lower (or front). Legs very slender, small.  
normal. Cth greenish, not conical, brown marks  
before it; anal plate concolorous. Inclusion distinct  
slightly forced (Sent to Busck)

Eat out one that was spun in by another larva  
and stuck. Cat. no. 15839

*Dichogama amabilis*  
Wöschel

874

Large Tynatids in houses of open up leaves.  
solitary but several in a bush of *Capparis jama-*  
*ensis* Jacq Palm Beach, Fla., Feb 18, 1900.

Hd 3-4 round, brown, apex rounded, 2, 3 high the



Joint 0 given to vertex, antennae  
rather long. White with large  
angular olivaceous blotchy  
markings and tiny black dots,  
the tubercles black ringed; an-  
tennae of 2 black. Two upper  
ocelli large with black central  
dots. Setae long fine, white. Body thick,  
a little flattened, narrowing somewhat post.  
Cth large, oval, transverse whitish, more  
translucent centrally and ant, the whitish part  
black dots & black marginal lat. Body  
whitish, the foot giving a green tint, a double  
yellow d. and single dusky lines 3-13 and  
circular edged & a little broken, sides a little  
whitish with a broken white lat. line  
above iii. Tubercles i-iii white, from tubercle  
black with a distinct white ring, absent on  
iii which is black smaller iv-v olivaceous white  
ringed and vi also on the apical segs. Anal  
flat greenish marked with white  
obscurely dusky edged above. Enclosing the  
greenish d. vessel. Sprock light red, that  
of 5 larva than rest. Feet short, pale.

(Resembles 781) Hd 2.1 Essential det. Ad-d lat. 2  
stig white lines, stig edged blackish above with  
slight markings, representatives white 5d, i-iii subequal  
i largest, tubercle black, then white, then small, slightly  
gray ringed, then finely white. iii like i & ii. iv & v  
vi smaller but not sharply marked. Cth whitish  
marked, black dotted. Anal plate less strong marked



875

Miners in thick fleshy leaves of Iva imbri-  
cata Walt., actually on the ocean beach, Palm  
Beach, Fla. Feb. 19, 1900. (See Cat. 15646-9)

Miner about 2 leaves with mine in leaf shows  
hole at the end, sometimes sand webbed up  
below or even some leaves united at end of  
short. Hd .5 flattened, a high but not to vertex  
brownish luteous, sutures of o brown, round  
from eye black with a blackish line along  
lower & cheeks. Body cylindrical, plump.  
measures distinct and a little folded.  
Cth large, wicised at post. angles, shiny  
brownish luteous. Body yellowish, more  
atly opaque, feet faintly green. Segs not  
distinctly annulate, shiny, 2-4 fold moderate  
12-13 labary, anal plate scarcely compressed,  
but setose. Tubercles minute, brownish,  
setae pale and obscure except at the  
extremities. i dorsal to ii; iii above & before the  
small ones, brown-tinted spinous; iv + v  
ant; on 5 or 6 feet, one obliquely above & before the  
other; vi post. on larva fold; vii of 3 in a Δ  
on ant. leg base. On 3 or 4 in ant. i to separate,  
ii + iii, iv + v, vi single. Skin minutely  
granular. Feet small, normal, curved, of  
7-10 in a complete circle, of 13 on ant. half  
of planta. (Ant. Muske)

876

Miners on palmetto Sabal palmetto solitary  
Palm Beach, Fla. Feb. 20 1900. A thick folded  
nest in an angle of the leaf a under old  
nest composed of silk and compressed frass  
(= palmetto fibre) arranged in 8 round chambers  
slightly overlapping & connected, successively large.  
Hd .5 mm, head 8-10 times in diam. Larva singly  
at the end an irregular mass of loose fibre  
and the whole overwound by a loose, distinct  
net of fine silk, covering also the area where  
the larva feeds. Pupa in the last large chamber.  
Hd 1.6 (9th hd from pupa 1.6) round, slightly bilobed  
a not over 1/2 to vertex, depressed at apex, free from  
laryng canal. Jaw brown, ocelli small black.  
Body flattened & thick ventrally, in center well  
marked, of uniform width. Segs smooth, 5-8  
fold moderate. 2-4 rather folded. Cth  
very slight, luteous, more membranous. Oblique  
whitish dotted with transparent spots. Tubercles  
sacculate except iii which is large & pale  
luteous. i dorsal to ii; iv + v. 12-13 minute, 13  
ant strongly folded; anal flap small  
membranous, unicolorous. D. dorsal dark.  
Setae fine. Brownish feet short.  
See Mar 5 1900 Cat no 15713



Our Cat 15792 n 879 *Stetha stellata* with several notes  
 of *Lycaenodon* *Pithecolobium guadalupense*, Puerto  
 Rico, Feb 22-23, 1900. In the old food  
 eating the red seed pulp. Not green, evident a  
 young leaf (not young leaves in that bush)  
 elliptical, flattened, ends, esp. post oblique  
 depressed; brownish, 5 or 6 fold dried; 5 or  
 region contracted; incision well marked, deep.  
 the segments short. Green, minutely densely  
 pubescent, granular, a white line along apex  
 of 5 or 6 fold 3-15 edged with diffuse reddish on  
 both sides, a dorsal dark brownish red line,  
 diffuse, indistinct in post part of segs, widest on  
 thorax consisting of brown granules on a sand-like  
 grayish ground. A broad prominence below the  
 thorax n 12 on upper aspect 5 or 6 fold with a  
 central circular area containing an excreta  
 radiate gland. Consisting of reddish granules  
 which cover whole 5 or 6 fold; granules, 4 or 5 in the  
 green part. Not small, with 2, elongate, brownish  
 legs. Head, labrum whitish edged with light green 3-  
 10 that were a few passages



was probably on the Philibertia. [Another Anura  
was Philibertia and Chionia and Sideroxylum was it]  
Echidna?

880-864

Syntomid? resting between leaves of *Ardisia*  
*floridana* Palm Beach, Fla. Feb 23 1900.  
Hd 2.3, rounded, brown, shiny black, labrum  
and antennae white, sutures of mandible &  
pale yellowish, not lobed. Body acutiform  
greatly resembling 844. 2 retracted, without  
ventrally. 3rd with one large dorsal elongate  
sd spot. 1st 15-18. 5-12 with i-vi large &  
rounded. i, iv and v smaller than the other  
3 each side anal pl. Venter a black patch  
dorsal white. Feet normal moderate.  
Blackish gray, lighter sv without marks.  
Mouth fleshy brown, pale & contrasting; hair  
rather sparse, moderate, more even but  
more longer on sides and a trace of  
a brown crest top 11-12. Hair whitish  
brown pale sv. (Johnny - brown) But = 864?

(881 cont)

Another Hd 1.8 Mar 1. Global free, sooty black base of ant  
& labrum whitish. Δ not 1/2 as white. Body cylindrical head  
uniform but well marked up 5-8, 12 enlarged d.  
Feet 8 small, punctate, normal 9, 10, 13, marked  
clippia style. Black, fine lines, lined with white.  
15-20 line for seg some confusion, some confluent  
hairs, sub-reticulate. Hairs below the dorsal sv fold  
minutely longitudinal and more reticulate. Ch  
obole, unicolor, a white spot each side. Sd orange  
spot partly white under a 5, 6, 8-12, 9-11 small.  
Similar spot on sv fold 7-12, largest 8-10. Anal plate  
& bases of feet concolorous, white reticulate. Thorax black.  
Shed Mar 2 Hd 2.7 round lobed full. Δ shaded dorsal, less  
than 1/2 ventral. Sooty black epistoma white. Body as  
before, c-d black, white line, a white d. sd & lat.  
large white spots. Body black fine white lines on  
Sd & sv spots creamy orange, white edged, the sd on 5, 6  
8-12, sv on 6-13. The feet black.

Cale.	.33	.58	.97	1.62	2.7	$\frac{6}{10}$
Hand	—	1.0	1.8	2.7	4.7	9

881

Handsome little insect on large leaved rare tree  
*Anura laurifolia* W Palm Beach, Fla.  
Feb 24 1900. Hd round and broad, then apical  
occurring lobes, sooty black, labrum narrow white  
sv. Body cylindrical, thickened at 5-7 and  
12 which is well limbed. Sides of 6 and 7 folded  
and projecting, abd joint on 9, 10 and 13. Setae  
black 9 and 10 a little greenish with black  
dorsal line, a pure white sd patch on 2, four  
small ones on 8, the 2 upper large and joined  
by a line, the second center of a white tubercle  
(apparently iii). A light orange oblique sd spot  
on 5 and 6 and a rounded one on 12. Setae  
short, black. Eggs annulate like the annulations.  
[Eggs 2 spheres, 55 diam all small irregular-pentagonal  
reticulate. No ribs. Not known. Pale.]  
Feb 27 Hd 1.8 Round, lobed, sooty black labrum white.  
Greatly rounded 3-7 forming a round thick leaf like  
feet of 4 annulate touching 8: 12 enlarged triangular  
abd joint very short & small of 7, 8, 9, 10, 13.  
Purple black, annulate, spotted with orange  
and white. White large spot back 2 and small one on  
edges c-d; a lat. patch on 8 in front. Orange oblique sd  
on 5 and 6, lat patch on 8 in front and sv spot on  
8-10, rounded sd on 12 [x or absent? None on 8]  
Late fine white trans line between the annulations.  
Shed Mar 6 Hd 1.8 (th. hd 1.0)

Shed Apr 7 1900. Cx w. 15831  
*Gonodonta musca* Neum



882

Leaf roller in *Psychotria undata* Palm Beach  
Fla. Feb 24, 1900. Rolls the leaf up several  
times with stitches on the outside  
and eats the inner turns. Does within.

Hol 1 roach long shiny pale cocoon, head  
sutures to vertex last very narrow and obscure.  
Moderate. 4 upper cells large, black and  
almost contiguous. Cell large, blackish but  
bisected; no anal pl. Body cylindrical, normal  
measures moderate, transparent color, the  
few dark blackish green reddish in thorax.  
Tubercles large, colorless. Faint blackish on  
thorax, i + ii, ii + iii, iv + v. On abd iv + v  
near by in line long. iv + v base dorsal. Trachea  
on anterior double white. Spiracle pale tan  
tarsus minuscule. Setae long pale.

Another Hol 1.5 yellowish butters, shorter in  
bright red-brown on apex of lobes, shining. Color  
black, as before. Body transparent, black  
from food, shining. On nearly black, bisected  
by a pale line. Tubercles large, solid blackish  
at the extremities, colorless centrally.

Chol Apr 8, 1900 Cent no 15834

*Desmia fages* Co

Open mouth  
above the marking which becomes inconspicuous on  
the feet are folded, the concealed part  
base of the foot of the upper black band and a  
yellow, edged below of the upper black band and a  
black white space with black spots, above by a  
narrow black line.  
883 cut 15833

Spring on 884 for plant *Philibertia viminalis*?  
Palm Beach Fla. Feb 24 1900. Solitary.

Hol 2.6 Round, flattened, head not flat, vertex  
wide 2, 3 low & with face 3 face shield shaped  
green, white granules on surface, colorless on  
face before dark cells to sd line of body.  
Long slender, feet short uniform, cylindrical  
slight maxillary pad, Dilophodont - shape. Horn  
long, oblique backward. Whitish green with  
white granules, rounded, protruding, tipped by pale  
making the surface rough. A moderate white  
sd line 2 and 1 horn which it curves up to  
vertex. Horn whitish green, pink at base when  
it touches sd line. Anal flap elliptical. Anal  
by plate long 0, reaching far beyond anal feet.  
Spiracles white with black central rectangle.

Mid lar! Hol 4 mm. Round elongate, vertex wide 2  
Δ 4 vertex 3. Brown green longitudinal striped with  
fine black dots, a white band from anterior to vertex  
& base. Body slender round, anal pl. elongate &  
rounded, anal by plate long Δ, horn out when  
rounded, extending well beyond plate. Horn round  
above, with a short thick cord. Greenish gray first  
segment blackish white or green ground as blackish  
white band sd band 2-horn, a narrow black  
black d. line 2-4 and gray-black dots 5-11.  
The pupa obscure. Feet mostly rounded black, white  
on feet, black, white, green except anal. The feet  
pale narrow times annulate with black. Horns  
dull yellow, obscure black at base, surrounded by  
a whitish ring. Spiracle brownish with a white dot  
above and below. Pupa like a stick - no warning mark.  
Nests perfect still all day even in bundling, eat up at night.  
(Note on back at which well grown becomes all very like  
and a mottled brown - in distance will pass to green.  
Inflated and expose the folded lines of abd feet which  
are yellow with black bands.



884

On *Erythrina bicolor* leaves with 870 but  
not a larva. Palm Beach Fla, Feb 25, 1900  
Hd round slightly 17 ± brownish orange. bases of ant.  
& epistoma white, ocelli and ends of ant. black  
Body normal Pyralidiform, joint II+III, IV, V,  
on abd IV+V. I in line. Sordid greenish d,  
more ochraceous lat., tubercles large jet black  
projected. A pale yellow sd line 3-12 broken  
on incision. Cx transparent, densely black  
spotted, anal feet sparsely spotted. The  
feet black, abd with brown tubercles of VII red  
black. Makes a web among the flowers.

Mar 2 caterpillar rotten and making many chips  
Ant Mar 30 1900, Cat no 15819

885 *Campa flaccida*

Leaf rollers on Swamp Lily ~~*Sagittaria latifolia*~~  
Palm Beach, Fla, Feb 25, 1900. Leaf rollers up  
with stitches without, inner part eaten, frass in.  
Hd 1.3 Small for the large body, lobed & high, nearly to  
vertex, pale luteous, mouth brownish, ocelli black  
Body cylindrical tapering at both ends, irregularly  
moderate folded. Shield almost transparent  
faintly testaceous brown at ends. Body transparent  
a little milky, feet dark green. Cx with black  
setae and light brown punctures in a curved row  
each side midrib, anal pl. like tubercles  
which are large those of 3, 4, 8, 13 have punctures  
on the i+ii, ii+iii large, elongate longitudinally  
iv+v. On abd i large than ii oblique elongate, slightly  
dorsal; iv+v, iv slightly dorsal. Feet short normal  
Tracheae white, d. vessel dark.

Ant March 14 1900. Cat no 15769.

(88) cont) Later horn dark violet above, d stripe  
violet, horn & dorsal, narrowing out to blackness  
Entom June 8

886

Gregarious on *Sabal palmetto* Palm Beach, Fla  
Feb. 26, 1900. Running a wide irregular path  
over the back of leaf covered with a web of loose  
web and commencing from (palmetto fibre)  
reaching down into a joint of the leaf which  
becomes dead and curled & filled with the  
small webby cocoons.

Sh. hd from 1.0

Hd .3 with cch jet black, rest of 2 in front  
pale brownish. Cx transparent, densely spotted  
with purple pigment, leaving a straight pale  
dorsal line. Tubercles small, black, with long  
pale dusters. Feet normal, short, thin, dusky.  
Tubercles a little elevated.

Ant March 3 1900 Cat no 15701-3 *Larva subolella*

filac above clasper black  
(88) cont) slightly yellowish. Jaws black, labrum fuscous  
brownish. Antennae mostly pale, ocelli brown shield  
except the upper 2 layers. Body large, robust, smaller  
before, anal plates large and thick, 12 enlarged successively  
with an enormous, black, club-like horn studded  
with black cones, the horn rounded, not pointed  
Sept. 8 - annulate, the ordinary granules minute, but  
the space was distinct pale and with rather  
long and distinct 2 horn hairs. perfectly  
visible without the lens. Green, dorsal dorsal  
line shading into purple, yellowish brown foot  
(6-10), the oblique very faint, dark shade post.  
light edged except 12-10 where is a very distinct, but  
bright white line edged with dark green before.  
Horn oliveaceous brown, the stridulating horn pale  
vibronous with brown tips. The 3 anal plates round  
triangular, green covered with large shiny white  
yellowish brown granules, faintly circled with yellow.  
Other abd feet pale. The yellowish white streaked spotted  
black & a few small white granules. Spiculae large  
dark brown, shield pale above & below with central white line



Ant July 1900 *Amphomyia antaenus* Dm  
Ant 15959

July 6 1900

(887)

Sphingid on 881 plant *Amorpha laurifolia*  
Palmer Beach Fla. Feb 26 1900 Had not eaten.  
but fed on young leaves of 1.0. Rms, green from 2, slight  
bilobes, a small, weakly 2 yellowish green, ocell black  
lobes white, body cylindrical, equal, in larvae not  
depressed, 12 a little enlarged with a long (.3.7 mm)  
stout antant horn, straight, oblique, blackened;  
Anal plate large, D with a stout erect horn (.5 mm)  
back side middle between which the 12 horn  
fit when depressed. Segs very fine annulate, horn  
subsegmental, faintly marked, yellowish but minute.  
Pal green, folded, increasing more yellowish; horn  
black, reddish along the joint, setae slender,  
rather long with markedly enlarged tips, pale and  
stout, prominent. Head .11, v above is ant ant,  
a seta on leg base. Tubercles imperceptible.  
Eye shield elliptical, slightly flattened above & below as  
usual, rounded. Shell white, thin. Dorsal  
granules (shagreen). Scales reticulate 2.4 x 2.0 x 1.8  
Head III 2 Htd 1.6 flat before high conical, the lobes  
quadrant into short ones which are closely approximate  
and contiguous. Small. Pal green, shagreened, not  
granular a faint brown line in face of lobe, more  
distinct as it reaches ventral corner; mouth whitish  
ocelli faint black, head cylindrical, granular, minute  
faint granular; horn long (.5.5 mm) & thick with  
faintly irregular, rather sparse spines. Yellow  
green, green dorsally; horn pale red brown towards  
base, top at sides and at tip, a black line outwards  
on the face. Anal plate D, nearly reaching end of  
anal foot plates which are rounded triangular  
spines pale ocellous. A dark shade on the  
surface behind vertex when hd rises above 2  
positioning obliquely forward. Sd horn & anal plate short cones.  
Horn depressed oblique, reaching beyond base of behind  
later the sides are oblique shaded but the end the  
line they appear are the oblique 12-13 and the  
Sd length double in living. Body yellowish

Ant 2-4 bearing smaller stopping to large head.  
Head III 2 Htd 2.5 high triangular, the dorsal points  
apex curving in front. (width) the flatter front back  
concave, height 4.5 mm green, sides & dorsal darker  
a pale line ocelli to vertex. Spines granular sub-  
spine in front before apex. tips of lobes yellowish  
with a faint line down back of each of same color  
Reddish, smaller before, horn large, very thick  
(8 mm) slightly arcuate blackened; extends nearly  
horizontally. Green with distinct elements pale yellow  
granules, a faint sd & s v yellow line, a dusky and  
an oblique 12-13. Shaded facing with whitish  
living. Darker d. and faint oblique shades 5-11.  
Spines brown pale at tip & bottom. Horn depressed  
spine with thick conical irregular tubercles. Black  
on dorsal half (and 2) greenish yellow below (part 2)  
but tips of spine black. Ab feet green. The black out-  
wardly. Anal shield green, black granular, a slight  
pale tubercle representing former sd horn. Slap round  
Head III 13 Htd 4 mm shaped as before, head oblique  
as that the vertex points forward and back of hd is level  
with dorsum. Scales shagreened, subspineous toward  
the horn taken after 2 whitish line on the side of each lobe  
and one on the back, running to vertex. Body robust,  
smaller before, annulate, sparsely yellow granular,  
the granules fine and also considerable fine below  
than without dorsal granules. Green, d. line darker, a  
oblique yellow stripe horn 10, the faint whitish spot,  
shading darker oblique shaded 5-9. Anal plate D  
smooth, dull ochraceous granular, spines brown, yellow  
at top & bottom & a narrow ventral central line.  
Horn very long, with a coarse, dented, coriaceous spine  
olivaceous yellowish below. Ab feet green. The black  
in an outward slope a broad point. Horn all black  
with coarse coarse granules. Olivaceous, without granules  
Sd d. horn purpleish sides 5-11 paler edge with sides.  
Head III 20 Htd 7 mm highly conical but without the  
points of previous stage. Vertex rounded, under surface  
impressed. O very small, almost to height, ventral granular  
to height with on the back, not reaching to vertex conical  
ventral behind. Shagreened fine and with sparse minute  
ornate granules and a very fine 2 horn toward vertex  
green, slightly shiny, a very obscure pale band up  
and angles from ocelli to vertex and a faint line  
a occipital fin base of vertex D. Apices of lobes



888

Notid on Cordia alliodora eating young leaves,  
Palm Beach, Fla., Feb. 26 1900. Hd. 2.5. Head  
lobes, apex under 2, face & feet to vertex; Area  
luculent green, ocelli and all the 13 tubercles black  
mouth pale brown. Body cylindrical narrow,  
12 enlarged, feet equal. Cph transparent  
green with black tubercles, anal flat, smooth  
marginally. Whitish green, finely lined with  
white or yellowish white. Tubercles narrowly  
black in obscure pale rings. In long black  
about ii, iii-iv and vi the color is faintly  
stained with yellow, making the ground then  
yellowish green, the brown pale yellow. Lines  
as d, <sup>stages</sup> above, below, over ii, below ii strong, ten above  
iii the upper weak, over iii below iii, over iv, below  
spiracle strong; between these are faint white  
markings, and more distinct sv. Feet yellow  
green, claspers reddish. The legs marked  
strong are broader and less crinkled than the  
others. Setae distinct black. iv. 5 upper can  
be above middle, 7 base below middle. 8-10 upper  
above, 10 over above; 11  $\frac{1}{2}$  & v, 12 below lower 2.  
Spiracles white, black narrowed. On 3 & 4  
10, 11, 12, ii, iii, iv, v, vi all well separated normal  
a line along vi is distinct and almost continuous.  
Between the legs are seen a white s.d. and s-v  
and head yellowish whitish, more distinct, but  
with lines these resolve as above. (best up on 12 leaves)  
moss being shaded with obscure pinkish a brown  
centered ground

Ant March 27 Cat no. 15813

889

Leaf tyger on 881 plant Arundo donax  
Palm Beach, Fla., Feb. 27, 1900. Taster Corymb  
star young leaves with patches and granules.  
Solitary. Hd. 5.5 long, lobed, <sup>above</sup> tubercles, smooth  
tinged shining, ocelli & striae on lower 2 & 9  
above black, smooth brown. Cph D a black patch  
setae, not inserted, smooth, distinct shining.  
Red 2 and 4 d with distinct sv gold, slightly  
flattened, incision distinct; pale green, tubercles  
small & obscure, pale smoky, on the 12 with  
10+11, 14+15, on abd 14+15 normal. Setae from  
small plate small, smoky, shining.

Hd 1.3 flattened, notched, para open to vertex  
shining. Setae small brown tinged, ocelli

Specimens similar in marking with  
♂ type lutheri Ckll. (fuscus).

from just up just 6-12 the d. round dark  
green. as also 2 and 13. Should and tubercles  
transparent, concave. Tubercles rounded  
slightly elevated. Setae fine, rather long, round  
thin not slightly shiny. Feet normal. 9 spine at  
the corner with a series of transverse walls of web,  
with a round hole in each near the leaf for  
hairs to pass through. Setae all solid black  
from inside. \*Ante shaded with blackish except  
tubercles & incision.

Out Cat 15773 Tortricid Lophodermus amata Dyar  
\*Out Ma 28 Cat 15816 another sp! Jmy Mc



Specimens similar in marking with  
♂ type lutheri Ck11. (fuscus).







888

Noctuid on Cordalia allamanda eating young leaves,  
Palm Beach, Fla., Feb. 26 1900. Hd. 2.5. Head  
bilobed, apex under 2, para O piece to vertex; Area  
lucent green, ocelli and all the 10 tubercles black  
mouth pale brown. Body cylindrical narrow,  
12 enlarged, feet equal. Cph transparent  
green with black tubercles, anal plate green  
narrowly. Whitish green, finely lined with  
white or yellowish white; tubercles narrowly  
black or obscure pale rings. No large blotch  
about ii, iii-iv and v the color is faintly  
stained with yellow, making the ground then  
yellowish green, the line pale yellow. Line  
as d<sup>sting</sup> above, below, over ii, below ii strong, then above  
iii the upper weak, over iii, below iii, over iv, below  
spiracle strong, between these are faint white  
smoking, and more distinct sv. Feet yellow  
green, claspers reddish. The legs marked  
strong are broader and less curved than the  
others. Setae distinct, black. iv. 5 upper cone  
below middle. 7 base below middle. 8-10 upper  
cone, 12 even above; 11  $\frac{1}{2}$  to v, 12 below lower 2.  
Spiracles white, black rimmed. The 3rd  
10, 11, 12, ii, iii, iv, v, vi all well separated normal.  
a line along vi is distinct and almost continuous.  
Within the legs are seen a white s.d. and s.v.  
and hind yellowish s.d. s.v. most distinct, but  
with legs these resolve as above. (Set up on 12 hours)  
Went behind clouds with obscurum put into a house  
& entered ground

Ant March 27 Cat no. 15813

889

Leaf tiers on 881 plant Arundo donax  
Palm Beach, Fla. Feb 27, 1900. Taster Copula  
the young leaves with stitches and punctures.  
Solitary. Hd. 5.5 long bilobed, <sup>dark</sup> tubercles  
triangular shining, ocelli & streak on lower 2 of  
lower black, mouth brown. Cph O a light white  
striae, not marked, smooth, tubercles shining.  
Red 2 and 3 d with distinct sv gold, slightly  
flattened, incision distinct; pale green, tubercles  
small & obscure, pale smoky, on the 12 & 13  
distinct, iv+vi, on abd iv+vi normal. Pygidia from  
small plate small, smooth, shining.  
Hd 1.3 flattened, notched, para O piece to vertex  
shining pale green, faint brown rings, ocelli  
rather large, black. Body 2 annulated, sv  
gold smooth, all transparent dark green, but  
more a less, feet much light yellow green  
from feet as feet 6-12 the d. v. and dark  
green as also 2 and 13. Should and tubercles  
transparent, concolorous. Tubercles smooth  
slightly elevated. Setae fine, rather long, brown  
skin not slightly shiny. Feet normal. 9 specimens  
the leaves with a series of transverse walls of web,  
with a round hole in each near the leaf for  
bees to pass through. Setae all solid black  
from inside. \*Another shaded with blackish except  
tubercles & incision.

Outs Cat 15773 Tortricid Lophodermus amotus on Arundo  
\*Out Ma 28 Cat 15816 another sp! J. M. W.



890 = 879

Little Lycenas or Swilandinia lundecellae  
young leaves. Palen Reed, Fla. March 1, 1900  
Shape of 879 post-glans and all. 1st stage  
long. brownish green, suture & d. showing a  
black triangle, eye large black. All  
soft yellowish green during greenish the green  
shades pale, pilose esp on the prominent & ridge

with carinae and prominent on 2 & 3. No  
sutures, all uniform. Ant. 16 (4 weeks @ 4)  
Sept 2 1/2 weeks @ 4

Received from Mrs. J. G. G.  
Jan 14, 1893

Received from Mrs. J. G. G.  
Jan 14, 1893

Received from Mrs. J. G. G.  
Jan 14, 1893

Received from Mrs. J. G. G.  
Jan 14, 1893

Received from Mrs. J. G. G.  
Jan 14, 1893

Received from Mrs. J. G. G.  
Jan 14, 1893

Men 4 length 8 mm. Green white granular, d. much  
darker, sides oblique, shaded & pale. a white or  
pale on post, eye on impressed area d. points refine  
through below special for 2 rows, in a cluster area  
on impressed on d. measure 11-12. Skin granular pale  
stellate with central brownish pile seta, the seta  
very fine, spinulate. No between minute forested  
margin of 2 rows, 2 and post 13 large.  
No marked brown suture, rim. Palen Reed  
epistoma pale, eyes in black dot. w. 1/2 in. 1/2 in. 1/2 in. 1/2 in.

Received from Mrs. J. G. G.  
March 18-1893

Received from Mrs. J. G. G.  
March 18-1893

Received from Mrs. J. G. G.  
March 18-1893

Received from Mrs. J. G. G.  
March 18-1893

Received from Mrs. J. G. G.  
March 18-1893

Received from Mrs. J. G. G.  
March 18-1893

Received from Mrs. J. G. G.  
March 18-1893



miners in stems of *Suitandria bonducella*  
under the epidermis of the bark a linear  
irregular wavy & ascending vein  
white at first with central dark space  
later yellow brown.

(to Busck)  
Palm Beach Fla. March 1 1901  
arrived from Feb. 11 to Feb. 16 (5 weeks)  
Received from Mr. Dyer for  
December 17-1892

\$20.00  
(to Busck) and  
Kille Baham

arrived from Oct. 14 to Nov. 11 (4 weeks)  
Received from Mr. Dyer for  
November 12, 1892  
\$16.00

Received from Mr. Dyer  
Oct. 14, (from weeks) (to 4 weeks)  
arrived from Sept. 16 to  
Received from Mr. Dyer  
October 14, 1892  
\$16.00



*Linca irregularis* crumpled near a  
upper surface of *Myrica caribaea*  
Palm Beach Fla. Mar. 3, 1901  
gradually withering away, starting  
anywhere a leaf, sometimes quite  
stagnant. (to Busck)

Received from Mr. Dyer  
for arrived from Friday, March 13  
to Friday Apr. 24 - (6 weeks)  
@ \$3.50 - twenty-five dollars  
May & June

April 28 - 1891  
\$21.00

Received from Mr. Dyer  
for arrived from Friday, Dec. 30  
to Friday, March 13 - (6 weeks)  
@ \$3.50 a week - twenty-five dollars  
May & June

March 15 - 1891  
\$21.00



Case cut in *Myrica cerifera*  
Palmer Road, Fla. Mar 3, 1900.  
Main on upper side, case small  
(pressing at 1/6 inch) (To Busck)

mostly on the leaves

Jan 30 small (6 mites @ \$3.50)

Received at 8 o'clock 2.25  
for services from Dec. 19 to  
1891 - Thursday Jan 25

Heavy snow

Indigenous dollars

Monday Dec. 19 (6 mites @ \$3.50)

received from Thursday Nov. 7. 1/2

Received at 8 o'clock 2.25  
Monday, Dec. 23

for services from Thursday Oct 10  
to Thursday Nov. 7 @ \$3.50 (for mites)

Received at 8 o'clock 2.25  
Thursday Nov. 7

Simple widening blotch main starting on midrib  
on margin and reaching edge on upper side of  
leaf of *Melanthera didyma* (57 plants) Palmer  
Road, Fla. Mar 4, 1900. Margin smooth.

Received at 8 o'clock 2.25  
for services from Thursday Oct 10 (8.30)

received from Boston to Philadelphia  
and for work from

Received at 8 o'clock 2.25  
for services from Thursday Oct 10 (8.30)

Received at 8 o'clock 2.25  
for services from Thursday Oct 10 (8.30)

Received at 8 o'clock 2.25  
for services from Thursday Oct 10 (8.30)

Received at 8 o'clock 2.25  
for services from Thursday Oct 10 (8.30)

Received at 8 o'clock 2.25  
for services from Thursday Oct 10 (8.30)

Received at 8 o'clock 2.25  
for services from Thursday Oct 10 (8.30)

Received at 8 o'clock 2.25  
for services from Thursday Oct 10 (8.30)



895

Egg of *Papilio cresphontes* (?) on *Xanthoxylum*  
pterota HBK Palm Beach Fla., March 6. 1900

Large round brown egg.

Hatched Mar 8. Larva brown, white saddle, and spot.  
Large warts. Not into orange.

Shed Mar 15

Shed Mar 22

Shed Mar 28

Shed Apr 4. Slender waist, big thorax, white  
saddle and hind spot. Resembles bird  
excrement.

Shed Apr 12. Still with saddle and spot  
though modified with other marks.  
Obviously *cresphontes*. Inflated for coll Apr 16

*G. F. Miller*

Oct 7<sup>th</sup> Rec'd of Mrs E R Dyer Ex<sup>r</sup>  
payment in full for wages for  
all & more under my charge  
& all acct's att'd & paid to  
Oct 14<sup>th</sup> - In full rendered Oct 9<sup>th</sup>

896

*Podocasis cyringae* Like 850 except lower  
cell has a weak lens. and seg. hardly  
distinct. The 1<sup>st</sup> in specimen is dark  
brown whereas 850 is light red brown, but  
this may be solely due to age.  
(alcoholic USNM. Sept 29 1903)

*G. F. Miller*

Aug 10<sup>th</sup> 1902  
Rec'd of Mrs E R Dyer Ex<sup>r</sup> pay-  
ment in full for wages for  
all & more under my charge  
& all accounts att'd &  
paid to Sept 1<sup>st</sup> 1902

Aug 10<sup>th</sup> 1902  
Rec'd of Mrs E R Dyer Ex<sup>r</sup> -  
ment. Payment in full for wages  
for all & more under my  
charge, & all accounts att'd &  
paid to date for this day  
& rendered.  
G. F. Miller











Received of Mrs & N. Dyer  
payment in full for wages  
to August 7<sup>th</sup> 1881

Frank Fisher

Received of Mrs & N. Dyer  
payment on full for wages  
for all and above of the men  
under my charge and all  
accounts att'd to date.

Aug 1<sup>st</sup> 1881.

F. L. Fisher

Received of Mrs & N. Dyer payment  
in full for wages to Sept 7<sup>th</sup> 1881

Frank Fisher

Received of Mrs & N. Dyer  
payment on full for wages  
to date June 2<sup>nd</sup> 1881

Received of Mrs & N. Dyer  
payment on full for wages  
to date June 2<sup>nd</sup> 1881

Received of Mrs & N. Dyer  
payment on full for wages  
to date June 2<sup>nd</sup> 1881

Received of Mrs & N. Dyer  
payment on full for wages  
to date June 2<sup>nd</sup> 1881

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to date June 2<sup>nd</sup> 1881

Received of Mrs & N. Dyer  
payment on full for wages  
to date June 2<sup>nd</sup> 1881

Received of Mrs & N. Dyer  
payment on full for wages  
to date June 2<sup>nd</sup> 1881



Received of Mrs Dyar \$ 25.00  
payment in full for one  
months wages - ending Feb  
28<sup>th</sup> 1878.

Thos Marshall

Received of Mrs Dyar \$ 30.00.  
payment in full for one  
months wages - ending Feb  
28<sup>th</sup> 1878.

Adam O'Sullivan

Received of Mrs Dyar \$ 12.90  
payment in full for bread from  
Sept 13<sup>th</sup> 1877 to Feb 28<sup>th</sup> 1878.

Mrs M. L. Margett

Per S. Margett

Received of Mrs E. N. Dyar payment  
in full for all wages and accounts  
to May 8<sup>th</sup> 1881

Frank Fisher

Received of Mrs E. N. Dyar payment  
in full for all wages and charges  
and those of the men making my  
charge and all accounts added  
to date - May 1<sup>st</sup> 1881.

G. J. Fisher

Received of Mrs E. N. Dyar payment  
in full for all wages and charges  
of the men under my charge, and all  
accounts added to March 1<sup>st</sup> 1881

G. J. Fisher



Sacra O'Neil

Received from Mrs Dyar on  
account \$40. which is payment  
in full for my wages & March  
8<sup>th</sup> 1878 - My mark -

Received from Mrs Dyer on  
account \$26.75 which is payment  
in full for my wages to March 29<sup>th</sup> 1878

Received from Mrs Dyar \$25.00  
which is payment in full for  
my wages to April 1<sup>st</sup> 1878  
Thos Marshall

Received from Mrs. J. J. J. J.  
 payment in full for wages  
 and account to April 1st  
 1878.



Received of Mrs E R Syar Executrix  
\$145 <sup>25</sup>/<sub>100</sub> payment in full for his  
wages and those of the men  
under his charge up to May 1<sup>st</sup>/<sub>11</sub>  
1878.

G. L. Carter

Received of Mrs E R Syar Executrix  
141 <sup>05</sup>/<sub>100</sub> payment in full for  
my wages and those of the  
men under my charge to June 1<sup>st</sup>/<sub>11</sub>  
1878.

G. L. Carter

Received of Mrs E R Syar  
Executrix \$124.80. payment  
in full for wages and the  
men under my charge to  
July 1<sup>st</sup>/<sub>11</sub> 1878

G. L. Carter

Received of E R Syar Executrix payment  
in full for my wages and those of the  
men under my charge to Feb 1<sup>st</sup>/<sub>11</sub> 1880

Received of Mrs E R Syar Executrix  
payment in full for my wages and  
those of the men under my charge  
to Jan 1<sup>st</sup>/<sub>11</sub> 1880.

Received of Mrs E R Syar Executrix  
payment in full for my wages  
and those of the men under my  
charge from Dec 1<sup>st</sup>/<sub>11</sub> 1879.



Received of Mrs E R Dyar  
Executing payment in full  
for my services and also men  
under my charge & Nov 1<sup>st</sup> 1878

G. L. Asher

Received of Mrs E R Dyar ex  
payment in full for services &  
Dec 1<sup>st</sup> 1878.

Adam O'Neill

Received of Mrs E R Dyar ex payment  
in full for services and bills, and  
also men under my charge &  
Dec 1<sup>st</sup> 1878.

G. L. Asher

Received of Mrs E R Dyar executing

payment in full for my wages

and share of the men under my

charge & Sept 1<sup>st</sup> 1879.

G. L. Asher

Received of Mrs E R Dyar executing

payment in full for my wages

and share of the men under my

charge & Oct 1<sup>st</sup> 1879

G. L. Asher

Received of Mrs E R Dyar executing

payment in full for my wages and

share of the men under my charge

& Nov 1<sup>st</sup> 1879.

G. L. Asher



Received of Mrs E R Dyar Executrix  
for my wages and those of the men  
under my charge to Jan 1<sup>st</sup> 1879.  
\$132.33.

G. L. Ames

Received of Mrs E R Dyar Executrix  
for my wages and those of the men  
under my charge to Feb 1<sup>st</sup> 1879  
in full 162.<sup>00</sup>

G. L. Ames

Received of Mrs E R Dyar Executrix  
for my wages and those of the men  
under my charge. \$82.94 for wages  
and \$12 for payment of Hatteras to  
March 1<sup>st</sup> 1879. Payment in full.

G. L. Ames

Received of Mrs E R Dyar Executrix  
for my wages and those of the men  
under my charge to Jan 1<sup>st</sup> 1879.  
\$129.50. Payment for Sept. 50  
two stable boys \$8.00 Carriage pole  
\$5.00 Payment in full to April 1<sup>st</sup>

Received of Mrs E R Dyar Executrix  
for my wages and those of the men  
under my charge to Feb 1<sup>st</sup> 1879  
in full 162.<sup>00</sup>

Received of Mrs E R Dyar Executrix  
for my wages and those of the men  
under my charge to March 1<sup>st</sup> 1879.  
Payment in full.

G. L. Ames



Received of Mrs E R Dyar Exec  
payment in full for my wages  
and those of the men under  
my charge to June 1<sup>st</sup> 1879.

G. L. Ashes

Received of Mrs E R Dyar Exec  
payment in full for my wages  
and those of the men under my  
charge to July 1<sup>st</sup> 1879

G. L. Ashes

Received of Mrs E R Dyar Exec  
payment in full for my wages  
and those of the men under my  
charge to Aug 1<sup>st</sup> 1879.

G. L. Ashes

Received of Mrs Dyar payment  
in full for my services to Oct  
24<sup>th</sup> 1878 - \$30.00  
John C. Dyar

Received of Mrs Dyar payment  
in full for services to Oct 8<sup>th</sup>  
1878. Maria Ross.

Received of Mrs Dyar \$42.  
payment in full for wages  
to Sept 29<sup>th</sup> 1878.  
Leah Ann Smith



Received of Mrs E H Dyar & Co payment  
in full for wages & cost and the  
men under my charge & Oct 1<sup>st</sup> 1878  
G. L. Ather

Received of Mrs E H Dyar & Co  
payment in full for wages & cost  
and the men under my charge  
& Oct 1<sup>st</sup> 1878  
G. L. Ather

Received of Mrs E H Dyar & Co  
20<sup>th</sup> payment in full for  
wages & cost and the men  
under my charge & Aug 1<sup>st</sup> 1878  
G. L. Ather

Received of E H Dyar Executry  
payment in full for my wages  
and those of the men under  
my charge to March 1<sup>st</sup> 1880

G. L. Ather

Received of E H Dyar Executry  
payment in full for my wages  
and those of the men under  
my charge to May 1<sup>st</sup> 1880

G. L. Ather

9002



Received of Mrs E R Dyar  
payment in full for my wages  
and those of the men under my  
charge to June 1<sup>st</sup> / 1880.

G. L. Asher

Received of Mrs E R Dyar payment  
in full for my wages and those  
of the men under my charge and  
accounts balanced to July 1<sup>st</sup> / 1880.

G. L. Asher

Received of Mrs E R Dyar payment  
in full for my wages and those of  
the men under my charge and  
all accounts in full to Aug 1<sup>st</sup>  
/ 1880.

G. L. Asher

Received of Mrs E R Dyar Executrix  
payment in full for my wages  
and those of the men under my  
charge and accounts balanced  
to date Jan 1<sup>st</sup> / 1881.

G. L. Asher

Received of Mrs E R Dyar Executrix  
payment in full for my wages and  
accounts to date Jan 23<sup>rd</sup> / 1881.

Frank Asher

Received of Mrs E R Dyar Executrix  
payment in full for my wages those of  
the men under my charge and accounts  
to date Feb 1<sup>st</sup> / 1881.

G. L. Asher



Oct Apr 29 Cat no 15835

900 C = 834

giving larvae in the bundles made in  
magnolia purpurea by larvae of *Pyrausta*  
lunata, sent by Mr. Knigzel from Palm  
Beach Fla. Apr 1900

Apr. 12 Hd. 8 rounded bilobed, minute  
punctured smooth, a roach high not de-  
pressed, shining black equatorial pale. Cth  
transverse, semicircular, shallowly notched  
behind black. Feet 2 black, others pale.  
Body slender, brown white, d. venter line  
darkish, feet dark, shining, shining in d.  
small as there is some white pigment on  
each side. Grooves and transverse. Tubercles  
small, pale with brown hair dots;  
i+v, i distinct ii, segs 2 annulate d; anal  
plate brown punctate. The spir. have 2 large black  
or blackish. ia+it, ii+it, iv+v, a abd setae  
iv+v also on the other. Feet normal. Spir  
fine granular under microscope. Spir black  
Hd 13 flattened bilobed, vertex under 2, a small  
d. vertex; dark brown, shiny, equatorial and  
basal joints and white, cells large, black  
Cth large on white, a branching spir. anal  
darkish slightly notched behind, with tubercles of 2  
lateral rows. Shading black central & below  
body marked plumbeous green, slender, a little  
flat ventrally 3-annulate, lat small. d. venter  
dark by transparency. Tubercles moderate white  
contorted with brown hair tubercles. Anal pl. with  
tubercles & traces of brown punctation. Thor feet  
brown also small, normal. Tubercles  
before, setae moderate, pale. Spiracle black  
ringed. 2 whitish in an edge to each.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.

To March 1<sup>st</sup> 1881.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.

Received of Mrs E N Syar Executing  
payment in full for my wages  
and chare of the oven under my  
charge, and all accounts settled.



900 g

Stem brown in young trigs of *Euclaudia* *bride-*  
*cella* sent to Busck originally without a  
 number. Another from Mr. Kiezel  
 described April 26 1900 (Palm Beach Fla)  
 Hd rounded bilobed vertex mode 2, head and  
 flat; rather flat before. smooth shining  
 light brown. a black line on post 2. <sup>from</sup> *Cherba*  
<sup>black</sup> *ocelli*. Antennae of 5 and from dark  
 brown; parac to vertex. w. 8 Red robust,  
 slightly flattened, 2nd & 3rd slight, feet short  
 normal. Ck transparent faintly luteous  
 Red radial transparent yellowish. Seps  
 faintly 3 annulate dorsally shining  
 tubercles small micular, colures.  
 setae moderate pale. spiracles round  
 black, <sup>rimmed</sup> *idant* h. ii, iv+v, vi present round  
 vii of 3 in a wide  $\Delta$ . skin minutely  
 granula, sharp-pointed. arthropods in c. h  
 ii a bit, iv & v approximate hinder 8  
 a paler d. line.

(758 cont) Shed ~~April~~ May 28 Hd 3.3 Head & head on  
 flat, apex narrowly mode 2. quadrate,  $\Delta$   
 centrally & top of lobes a tooth bulging, parac  
 piece nearly to vertex. large anterior purplish  
 a little curved inward. long brown slender, most  
 apertures & central part of parac piece whitish,  
 luteous diffuse line each side in center and on  
 side of lobes II & body, antennae pale, 3rd  
 slightly flattened, robust, only moderate elongate  
 moniform, no lumps. Tubercles elevated cone-  
 like, more distinct on post  $\frac{1}{2}$  of body.  
 The feet narrow, appressed; abd long, 13 with  
 large  $\Delta$  plate pushed behind into thick sub-  
 anal prong. Anal plate  $\Delta$ , with a central  
 carina just that becomes a groove and, the post  
 edge is ~~is~~ dented by 4 tubercles. setae short &  
 pointed large on anal H. Rich brown &  
 blackish, relieved by white. Brown white,  
 almost entirely overlaid by other colors. D.  
 sp. marked red-brown & ochraceous, an ill defined  
 genual d. line, shiny & thorax blackish &  
 post. at ends of seps. A broad shaded blackish  
 band; a lat. & stig blackish band, all ill  
 defined, mostly the space between shaded color  
 & brown, with white showing in spots on post  
 edge of seps. A broad sv band, a narrow one  
 each side obscure median ventral, all dark  
 and like the other. Space between similar  
 marked. Venter of 5 and spots below spiracles  
 on sv fold are lighter, yellow between the  
 dark bands. The feet whitish, abd darkly  
 marked, blackish gray. Lines continuous over  
 the shields. Spiracles gray, black rimmed.  
 15264 = *Euclaudia serrata* Dur (not desc HES)  
 Series XVI Shortening to pupate June 18 (inflated  
 rather than 8th pupa)

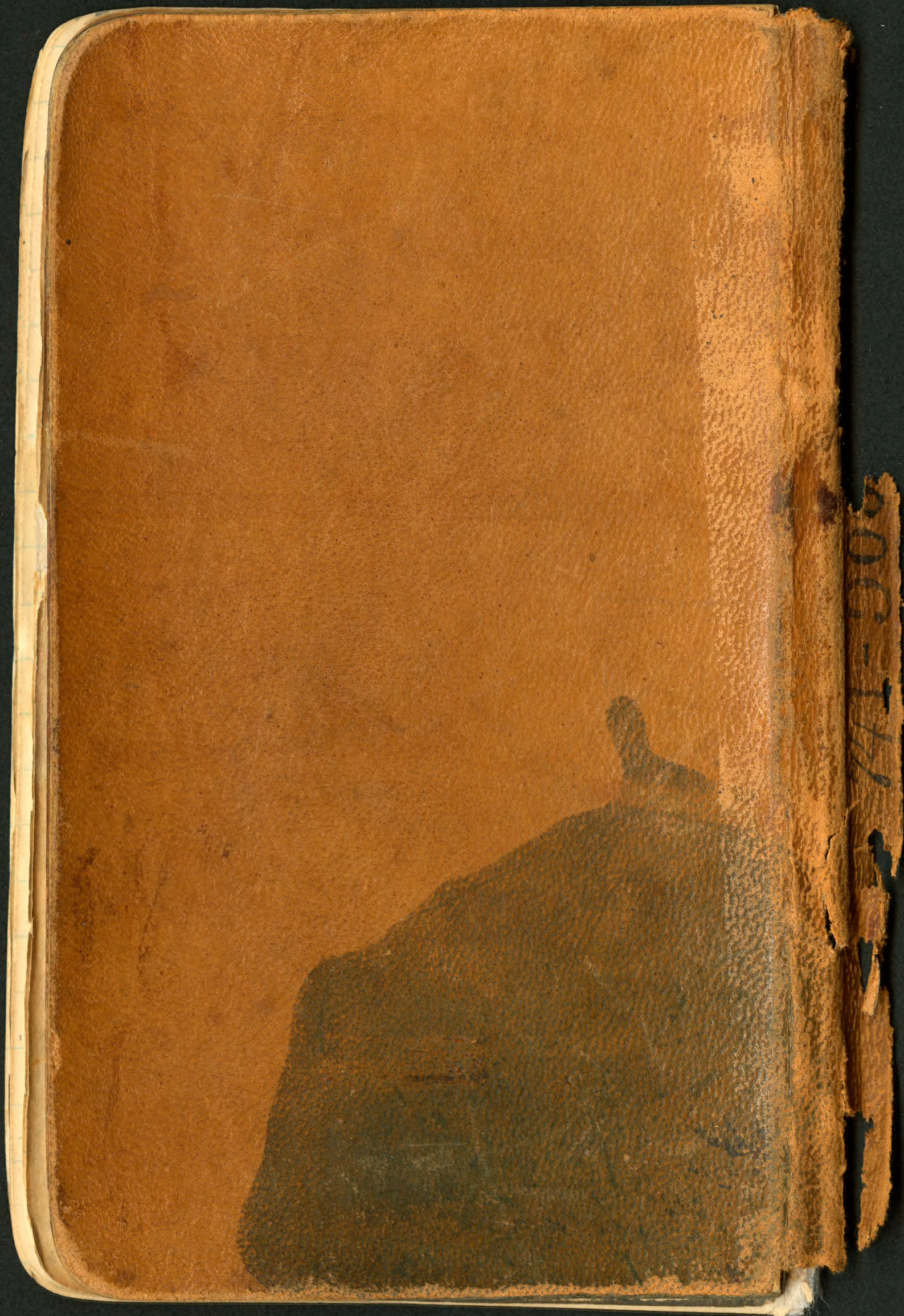


March 1<sup>st</sup> 1878

Receipt Book.

Mrs H. S. Dyar





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